



Service Manual

Nakamichi SR-4 SR-4A Stereo Receiver



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1. GENERAL

1.1. Voltage Selector

Voltage selector is installed on the rear panel for Other version of the Nakamichi SR-4.
This voltage selector can select either 110 V, 120 V, 220 V or 240 V at customer's disposal.

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
01	FA03581A	Package Ass'y (SR-4A)	1	03	0B90194A	Antenna Adapter F	1
	FA03582A	Package Ass'y (SR-4 (Canada))	1	04	0B90198A	AM Loop Antenna	1
	FA03584A	Package Ass'y (SR-4 (Australia))	1	05	0B90242A	Battery	1
	FA03583A	Package Ass'y (SR-4 (Other))	1	06	DA04042A	Remote Control Unit	1
02	0F04022A	Carton Box (SR-4A)	1	—	0D03092B	Poly-Bag 320x340x0.08	1
	0F04024A	Carton Box (SR-4)	1	—	0D04449A	Important Notice Card	1
03	0F04041A	Packing L	1	—	0D04651B	Owner's Manual SR-4/3/2 (English)	1
04	0F04042A	Packing R	1	—	0D04764A	Owner's Manual SR-4E/3E/2E, SR-4/3/2 (English/German/French)	1
—	0F03670A	Poly-Sheet	1	—	0D04673B	French Text (SR-4/3/2 (Canada))	1
—	0M03457A	Voltage Seal 240V (SR-4 (Australia))	1	—	0D04674B	Owner's Manual Text (SR-4/3/2 (Australia))	1
—	0M03456A	Voltage Seal 220V (SR-4 (Other))	1	—	0D04675B	Owner's Manual Text (SR-4/3/2 (Other))	1
01	DA04037A	Accessory Ass'y (SR-4A)	1	—	DA03873A	Warranty Card Ass'y (SR-4A)	1
	DA04038A	Accessory Ass'y (SR-4 (Canada))	1	—	0F04043A	Poly-Bag 80x150	1
	DA04040A	Accessory Ass'y (SR-4 (Australia))	1	—	0D04766A	Catalogue U.S.A. (SR-4A)	1
	DA04039A	Accessory Ass'y (SR-4 (Other))	1	—			
02	0B90070A	AM Loop Antenna Holder	1				
	0B90081A	Feeder Antenna	1				

1.2. Package Ass'y and Parts List

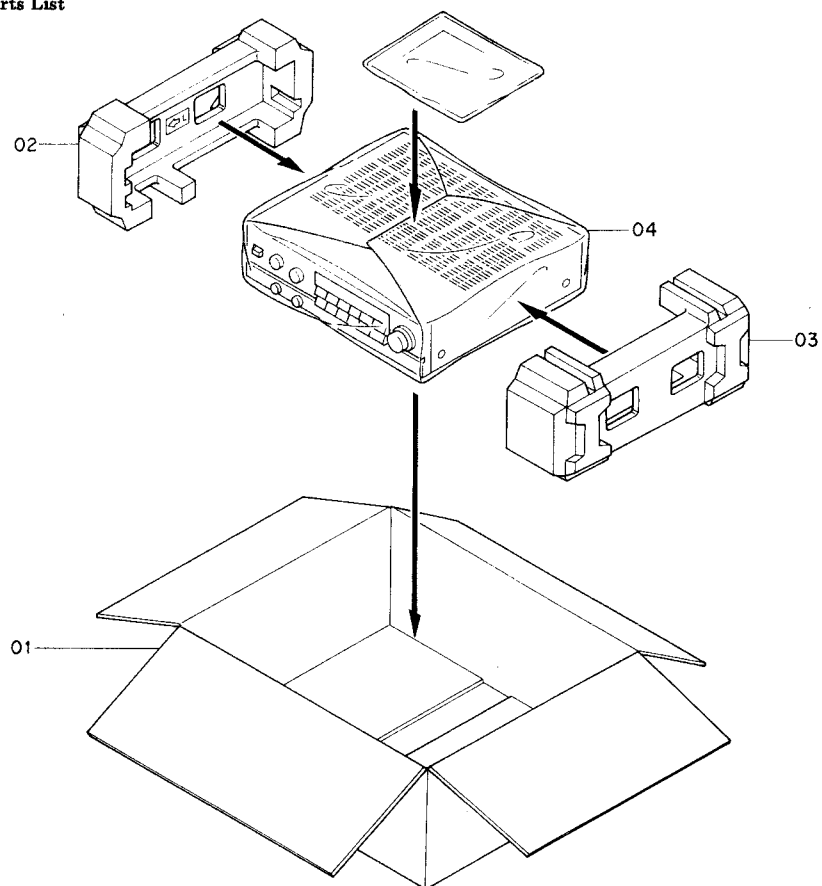
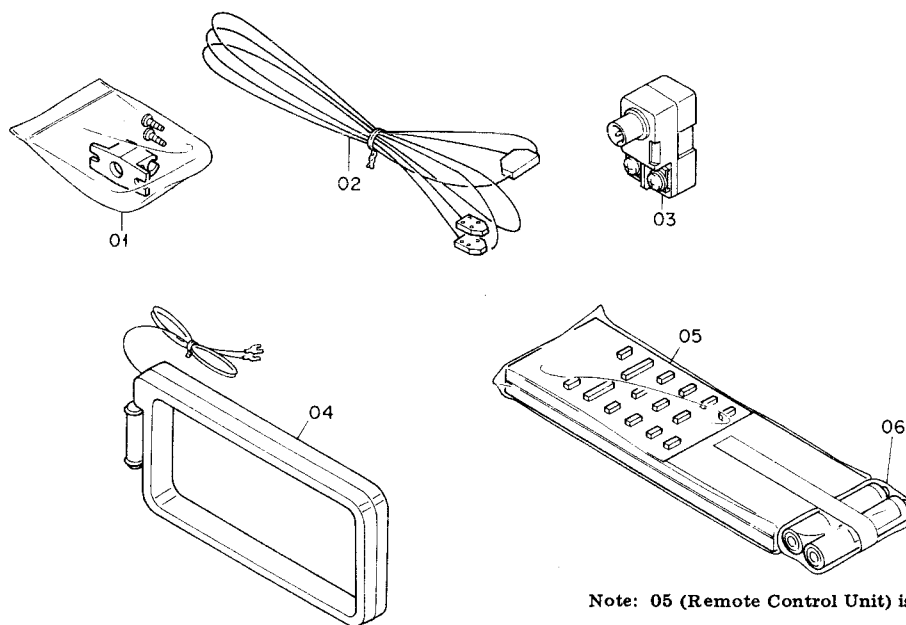


Fig. 1.1

1.3. Accessory Ass'y and Parts List



Note: 05 (Remote Control Unit) is supplied in unit form

Fig. 1.2

2. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

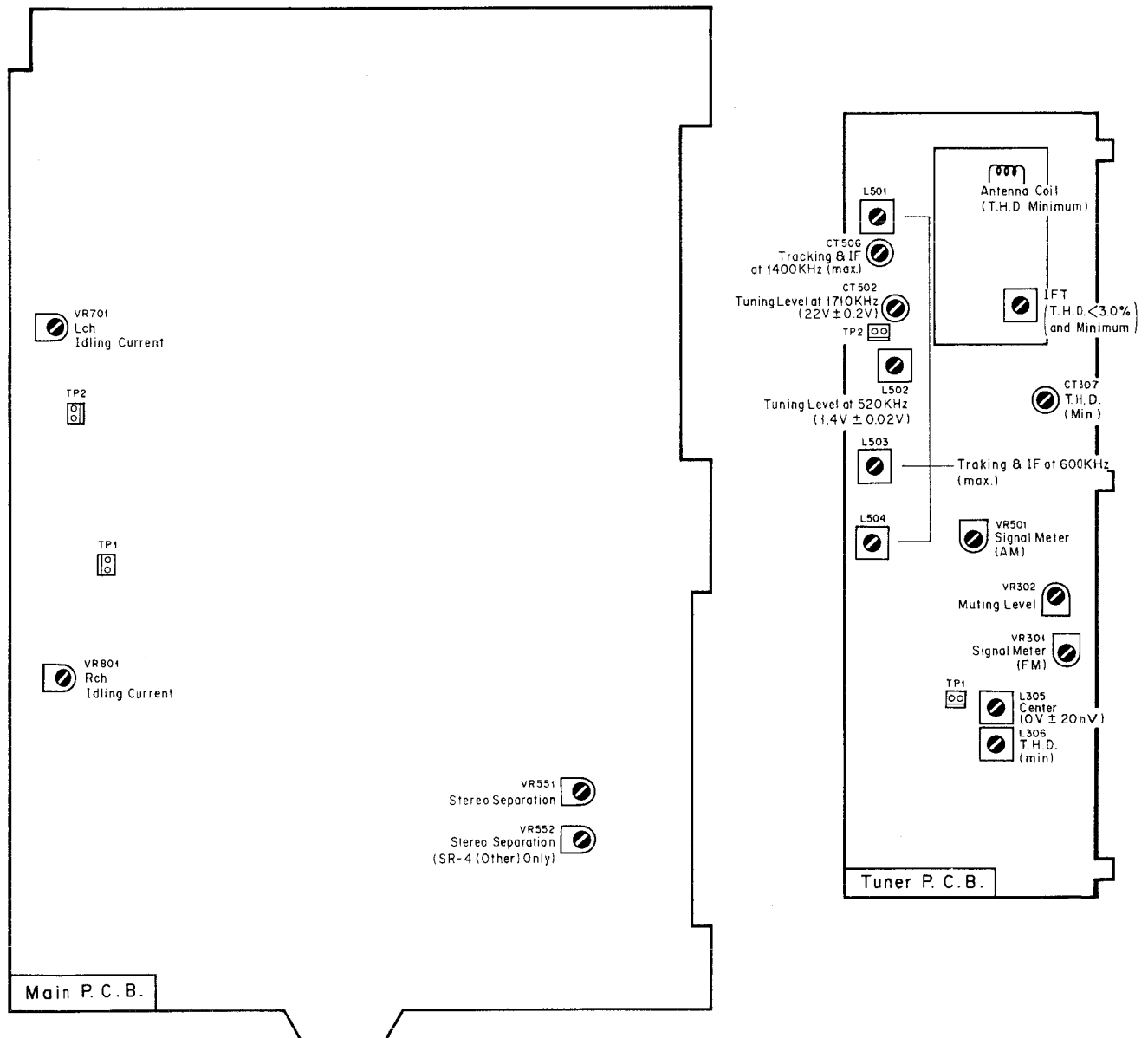


Fig. 2

3. ELECTRICAL ADJUSTMENTS

3.1. Power Amplifier Section

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Idling Current	None	DC Voltmeter between TP2-1 & 2 and TP1-1 & 2 on Main P.C.B.	Input Selector - CD or Aux Output Level - Min. Speaker Selector A/B - OFF	Main P.C.B. VR701 VR801	1. Insert shorting plugs into the CD Player Input Jacks. 2. Turn ON the power and allow 3 minutes before adjustment. (Top Cover must be installed before adjustment). 3. Adjust VR701 (VR801) to obtain 23 mV $\pm$ 1 mV on the DC voltmeter.

3.2. Tuner Section

Note: Adjustment should be made in a shielded room in principle.

3.2.1. FM Tuner Section

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Preliminary Step	See Fig. 3.1	Stereo Receiver Input Selector - Tuner Band Selector - FM Tape Monitor - Source Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - See REMARKS		1. Set the Stereo Receiver as indicated in the MODE. 2. Adjustment and confirmation should be made after tuning in to the set carrier frequency of the Signal Generator. Note: Contents of modulation 1. For U.S.A., Canada & Other (Wide) o Stereo Audio: 1 kHz, 91% Pilot: 19 kHz, 9% o Mono Audio: 1 kHz, 100% 2. For Australia & Other (Narrow) o Stereo Audio: 1 kHz, 51% Pilot: 19 kHz, 9% o Mono Audio: 1 kHz, 60%
2	Usable Sensitivity Adjustment	Distortion Meter to Tape 1 Record Output Jacks	Stereo Receiver Same as above Signal Generator Freq. - 98 MHz RF Level - 12 dBf Modulation - Mono	Tuner P.C.B. Front-end IFT Antenna Coil (See Fig. 2)	1. Set the Stereo Receiver to Manual mode by pressing the Tuning Mode button. 2. Adjust the IFT to obtain minimum distortion (total harmonic distortion (THD): 3% or less). 3. Adjust the distance between windings of antenna coil to obtain minimum distortion. 4. Set the frequency of the Signal Generator to 90 MHz/106 MHz and check that the THD is 3% or less.

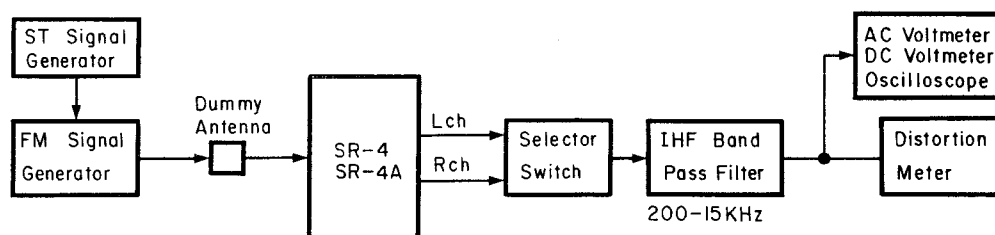


Fig. 3.1

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
3	Center Voltage and THD Adjustment	DC Voltmeter between TP1-1 & TP1-2 on Tuner P.C.B. and Distortion Meter to Tape 1 Record Jacks	Stereo Receiver Same as above Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - Mono	Tuner P.C.B. L305 L306	1. Set the Stereo Receiver to Manual mode. 2. Adjust L305 so that the reading on the DC voltmeter is 0 V $\pm$ 20 mV. 3. Adjust L306 to obtain minimum distortion (THD: 0.07% or less). Repeat 2 and 3, if necessary.
4	Muting Level Adjustment	Oscilloscope to Tape 1 Record Output Jacks	Stereo Receiver Same as above Signal Generator Freq. - 98 MHz RF Level - 29 dBf Modulation - Stereo	Tuner P.C.B. VR302	1. Set the Stereo Receiver to Auto mode. 2. Rotate VR302 fully counterclockwise. Then, return it clockwise gradually until a waveform appears on the oscilloscope. 3. Decrease the RF level of the Signal Generator until the waveform on the oscilloscope disappears. Then increase the RF level gradually until a waveform appears again. At this point, check that the RF level of the Signal Generator is 29 dBf $\pm$ 3 dB.
5	Signal Strength Meter Level Adjustment	None	Stereo Receiver Same as above Signal Generator Freq. - 98 MHz RF Level - 56 dBf Modulation - Stereo	Tuner P.C.B. VR301	1. Set the Stereo Receiver to Auto mode. 2. Adjust VR301 so that all segments (1-5) of the signal strength meter light up. 3. Decrease the RF level of the Signal Generator to distinguish the segment 5. Next, increase the RF level gradually so that the segment 5 starts illuminating. At this point, check that the RF level of the Signal Generator is 56 dBf $\pm$ 2 dB.
6	Stereo Separation Adjustment	AC Voltmeter to Tape 1 Record Output Jacks	Stereo Receiver Same as above Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - L or R only	Main P.C.B. VR551 Main P.C.B. VR552 (Other only)	For U.S.A., Canada & Australia versions: 1. Set the Stereo Receiver to Auto mode. 2. Apply modulation to only L channel. 3. Adjust VR551 to obtain minimum reading on the AC voltmeter at the R channel output jack. 4. Apply modulation to only R channel. 5. Check that the reading on the AC voltmeter at the L channel output jack is within $\pm$ 1 dB with respect to the reading in 3. If not, repeat 2 through 4. For Other version: 1. Set the switches on the rear panel as follows: Freq. Step FM/AM - 100 kHz/10 kHz IF Band - Wide 2. Adjust VR551 by applying the same procedures as mentioned above. 3. Set the switches as follows: Freq. Step FM/AM - 50 kHz/9 kHz IF Band - Narrow 4. Apply the same procedures as mentioned above, except for VR552.

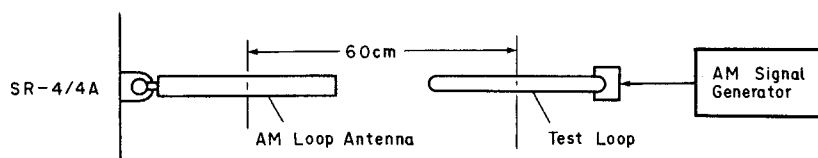


Fig. 3.2

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
7	Stereo/Mono Selection Check and THD Adjustment		Stereo Receiver Same as above Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - Stereo/ Mono	Main P.C.B. CT332	1. Set the Stereo Generator to L-R mode. 2. Set the Stereo Receiver to Manual mode and check that the Stereo indicator goes out and stereo outputs disappear. 3. Set the Stereo Receiver to Auto mode and adjust CT332 to obtain minimum distortion (THD: 0.09% or less).

3.2.2. AM Tuner Section

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Tuning Level Adjustment	DC Voltmeter between TP2-1 and TP2-2 on Tuner P.C.B.	Stereo Receiver Input Selector - Tuner Band Selector - AM Tape Monitor - Source Signal Generator Freq. - 520 (522) kHz/ 1710 (1611) kHz	Tuner P.C.B. L502 CT502	1. Set the frequency of the Signal Generator to 520 kHz (522 kHz for Australia and Other (Narrow)) and make tuning. 2. Adjust L502 to obtain 1.4 V $\pm$ 0.02 V on the DC voltmeter. 3. Change the frequency to 1710 kHz (1611 kHz) and make tuning. 4. Adjust CT502 to obtain 22 V $\pm$ 0.2 V on the DC voltmeter. 5. If satisfactory results are not obtained, repeat 1 through 4.
2	Tracking and IF Adjustment	AC Voltmeter to Tape 1 Record Output Jacks	Stereo Generator Same as above Signal Generator Freq. - 600 (603) kHz/ 1400 (1404) kHz RF Level - 82 dBμ/m Modulation - 400 Hz, 30%	Tuner P.C.B. L501 L503 L504 CT506	1. Set the measurement instruments as shown in Fig. 3.2. Set the distance between the AM Loop Antenna of the SR-4/SR-4A and a test loop to 60 cm. To obtain 56 dBμ/m at the AM Loop Antenna, set the RF level output of the AM Signal Generator to 82 dBμ/m as loss is 26 dBμ/m in this setting. 2. Set the frequency of the Signal Generator to 600 kHz (630 kHz for Australia and Other (Narrow)) and make tuning. 3. Adjust L501 to obtain maximum reading on the AC voltmeter. 4. Adjust L503 to obtain maximum reading on the AC voltmeter. 5. Adjust L504 to obtain maximum reading on the AC voltmeter. 6. Set the frequency to 1400 kHz (1404 kHz) and make tuning. 7. Adjust CT506 to obtain maximum reading on the AC voltmeter. 8. Repeat 2 through 7 once.
3	Signal Strength Meter Level Adjustment	None	Stereo Generator Same as above Signal Generator Freq. - 1000 (999) kHz RF Level - 104 dBμ/m	Tuner P.C.B. VR501	1. With the same setting as in Step 2, set the RF level output of the AM Signal Generator to 104 dBμ/m in order to obtain 78 dBμ/m at the AM Loop Antenna. 2. Set the frequency of the Signal Generator to 1000 kHz (999 kHz for Australia and Other (Narrow)) and make tuning. 3. Adjust VR501 so that the segment 5 of the signal strength meter starts illuminating. Note: Before adjustment, select AM mode and wait for more than three minutes.

4. MECHANISM ASS'Y AND PARTS LIST

4.1. Synthesis

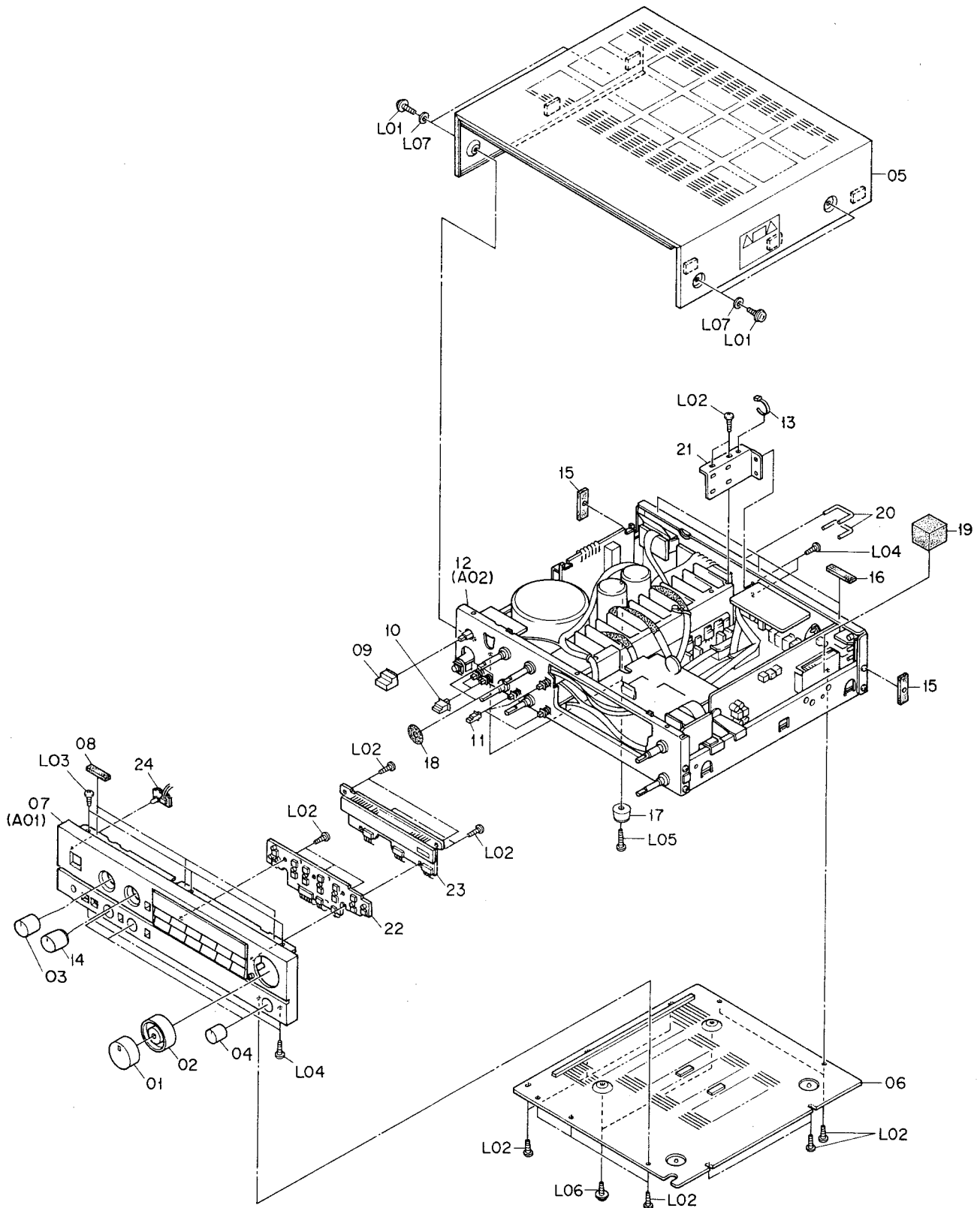


Fig. 4.1

4.2. Front Panel Ass'y (A01)

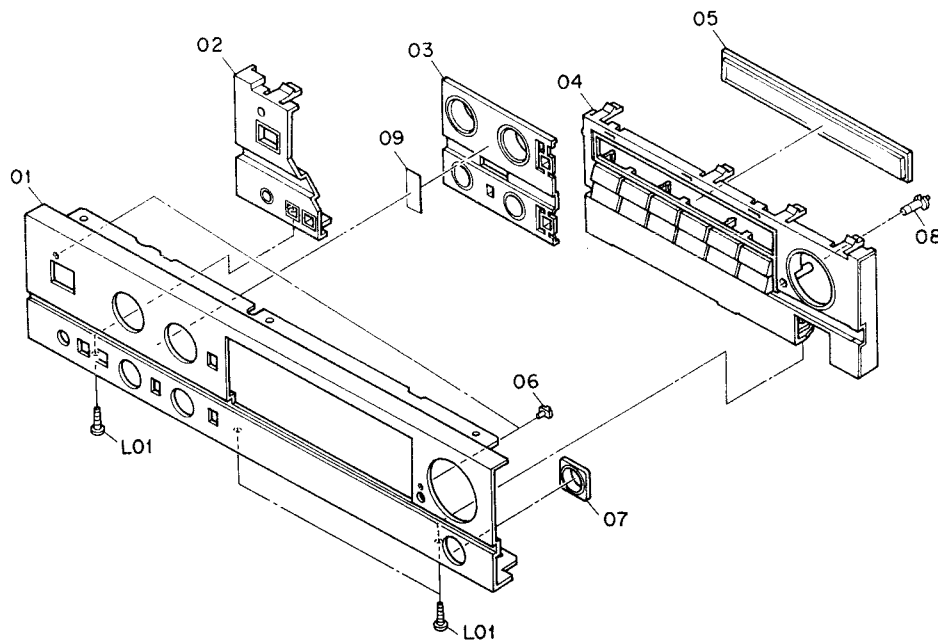


Fig. 4.2

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
		Synthesis Serial No.: D10601001 -		18	0J05258B	Selector Knob Himelon	2
				19	0J05365A	Front-end Cushion	1
01	HA05241A	Volume Knob Ass'y	1	20	0B90256A	U-shape Pin 14	2
02	HA05242A	Balance Knob Ass'y	1	21	0J05204B	Heat Sink Holder C	1
03	HA05105A	Selector Knob Ass'y	1	22	BA06593A	Control Switch P.C.B. Ass'y	1
04	HA05106A	Tone Control Knob Ass'y	3	23	BA06592A	Display P.C.B. Ass'y (SR-4A & SR-4 (Canada))	1
05	HA05234A	Top Cover Ass'y (SR-4A & SR-4 (Canada & Australia))	1		BA06646A	Display P.C.B. Ass'y (SR-4 (Australia & Other))	1
	HA05235A	Top Cover Ass'y (SR-4 (Other)) (Consisting of the followings:)	1	24	BA06645A	Power Indicator P.C.B. Ass'y	1
	(OH04934C)	Top Cover	(1)	L01	0E03032A	BT4x8 @ Pan Washer-faced (Black Chromate)	4
	(OJ05261A)	Top Cover Cushion	(5)	L02	0E00868A	BT3x8 @ Binding (SR-4A)	21
	(OM04377B)	Caution Label	(1)		0E00868A	BT3x8 @ Binding (SR-4)	19
	(MA01001A)	F. Code Labels	(1)	L03	0E00857A	BT3x6 @ Binding	3
	(OM04811A)	Voltage Caution Sheet (SR-4 (Other))	(1)	L04	0E00921A	BT3x8 @ Binding (Black Chromate)	4
	(OM04812A)	Voltage Caution Label (SR-4 (Other))	(1)	L05	0E00888A	BT3x12 @ Binding	2
				L06	0E03157A	BT3x8 @ Binding with Washer	2
				L07	0E03410A	Washer 4.3x8x0.8	4
06	JA04283A	Bottom Cover Ass'y (Consisting of the followings:)	1		0M03917A	Seal (SR-4A)	1
	(OE00888A)	BT3x12 @ Binding	(2)		0M04380A	Barrier Caution Seal CS2 (SR-4A & SR-4 (Canada))	1
	(OJ05162A)	Leg T-S	(2)		0M04896A	Fuse Caution Seal (SR-4A & SR-4 (Canada))	1
	(OJ05214A)	P.C.B. Cushion	(1)		0M04897A	Serial No. Seal	1
	(OJ05309A)	BS Damper 1VR	(2)		MA01003A	US Labels (SR-4A)	1
	(OJ05324C)	Bottom Cover	(1)				
	(OJ05367A)	Heat Sink Cushion	(1)				
	(OM04377B)	Caution Label	(1)	A01	HA05213A	Front Panel Ass'y (SR-4A)	1
07	HA05213A	Front Panel Ass'y (SR-4A)	1		HA05216A	Front Panel Ass'y (SR-4 (Canada))	1
	HA05216A	Front Panel Ass'y (SR-4 (Canada))	1		HA05215A	Front Panel Ass'y (SR-4 (Australia & Other))	1
	HA05215A	Front Panel Ass'y (SR-4 (Australia & Other))	1			Serial No.: D10601001 -	
08	OJ05364A	Top Cover Cushion T4	5				
09	OH04947A	Power Switch Knob	1	01	OH05042A	Front Panel (SR-4A)	1
10	OH04950B	Push Switch Knob 10L	2		OH05043A	Front Panel (SR-4)	1
11	OH04949B	Push Switch Knob 5L	3	02	OH04935C	Front Escutcheon L	1
12	JA04278A	Chassis Ass'y (SR-4A)	1	03	OH04936A	Front Escutcheon C	1
	JA04282A	Chassis Ass'y (SR-4 (Canada))	1	04	HA05224A	Front Escutcheon R Ass'y	1
	JA04280A	Chassis Ass'y (SR-4 (Australia))	1	05	OH04938A	Display Lens	1
	JA04281A	Chassis Ass'y (SR-4 (Other))	1	06	OH05039A	Power Lens	1
13	OB90019A	Insu-Lock SKB80 (SR-4A)	34	07	OH05040A	Loudness Escutcheon	2
	OB90019A	Insu-Lock SKB80 (SR-4)	37	08	OH05041A	Muting Switch Knob	1
14	HA05243A	Selector Knob Ass'y	1	L01	OE00921A	BT3x8 @ Binding (Black Chromate)	3
15	OJ05226A	Side Cushion	2				
16	OJ05363A	Top Cover Cushion T3	3				
17	OJ05162A	Leg T-S	2				

4.3. Chassis Ass'y (A02)

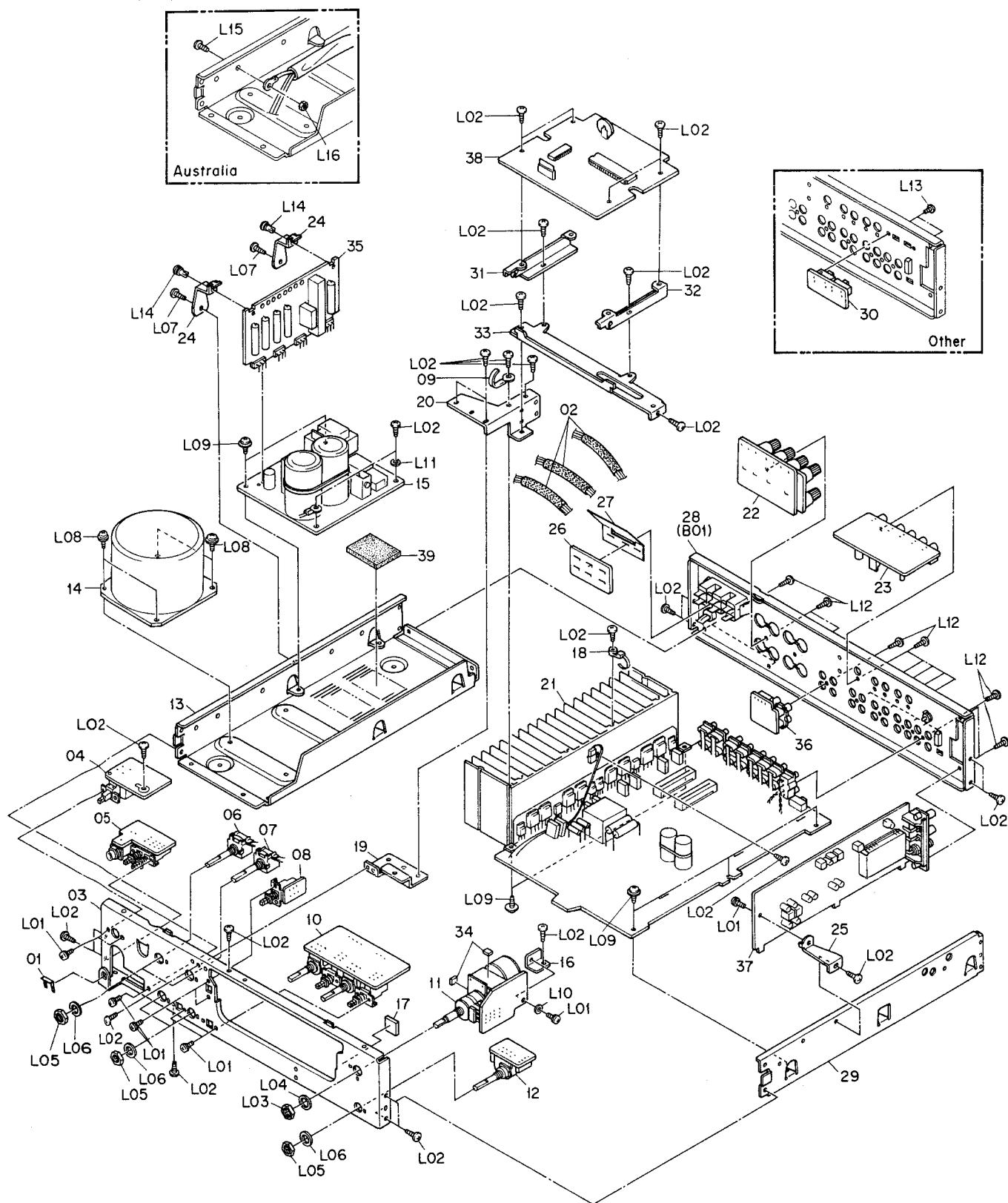


Fig. 4.3

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
A02	JA04278A	Chassis Ass'y (SR-4A)	1	L13	OE00945A	M2.6x4 @ Binding (Black Chromate)	2
	JA04282A	Chassis Ass'y (SR-4 (Canada))	1			(SR-4 (Other))	
	JA04280A	Chassis Ass'y (SR-4 (Australia))	1				
	JA04281A	Chassis Ass'y (SR-4 (Other))	1	L14	OJ05284A	Plastic Rivet 3x4.5	2
		Serial No.: D10601001 -		L15	OE00506A	Nut Hex. M4 (SR-4 (Australia))	1
01	OJ05092A	Snap Plate	1	L16	OE00929A	M4x8 @ Binding (SR-4 (Australia))	1
02	OB80126A	Glass Fiber Tube	3	—	OM04898A	Amp. No. Seal	1
03	OJ05339A	Front Chassis	1	—	OB80125A	Transformer Wire (SR-4 (Other))	1
04	BA06605A	Power Switch P.C.B. Ass'y (SR-4A & SR-4 (Canada))	1	—	OJ05373B	Diode Barrier	1
	BA06615A	Power Switch P.C.B. Ass'y (SR-4 (Australia))	1				
	BA06807A	Power Switch P.C.B. Ass'y (SR-4 (Other))	1				
05	BA06600A	Speaker Switch P.C.B. Ass'y	1				
06	OB70101A	Rotary Switch 370mm	1				
07	OB70102A	Rotary Switch 340mm	1				
08	BA06608A	MM/MC Switch P.C.B. Ass'y	1				
09	OE03145A	Coating Clip CS-9	1				
10	BA06598A	Tone Control P.C.B. Ass'y	1				
11	BA06597A	Volume Motor P.C.B. Ass'y	1				
12	BA06604A	Loudness Volume P.C.B. Ass'y	1				
13	OJ05325B	Power Supply Chassis	1				
14	OB50087A	Power Transformer (SR-4A & SR-4 (Canada))	1				
	OB50088A	Power Transformer (SR-4 (Australia))	1				
	OB50089A	Power Transformer (SR-4 (Other))	1				
15	BA06599A	Power Supply P.C.B. Ass'y	1				
16	OJ05331A	Motor Holder	1				
17	OJ05307A	BS Damper 1R	1				
18	OB90210A	Insu-Lock T30MR-HS	1				
19	OJ05323B	Heat Sink Holder B	1				
20	OJ05334A	Heat Sink Holder A	1				
21	BA06594A	Main P.C.B. Ass'y (SR-4A & SR-4 (Canada))	1				
	BA06595A	Main P.C.B. Ass'y (SR-4 (Australia))	1				
	BA06596A	Main P.C.B. Ass'y (SR-4 (Other))	1				
22	BA06603A	Speaker Terminal P.C.B. Ass'y	1				
23	BA06602A	Video Amp. P.C.B. Ass'y	1				
24	OJ05321A	Fuse P.C.B. Holder	2				
25	OJ05322A	Tuner P.C.B. Holder	1				
26	BA06601A	AC Outlet P.C.B. Ass'y (SR-4A & SR-4 (Canada & Other))	1				
27	OJ05327B	AC Insulator (SR-4A & SR-4 (Canada & Other))	1				
28	HA05218A	Rear Panel Ass'y (SR-4A)	1				
	HA05220A	Rear Panel Ass'y (SR-4 (Canada))	1				
	HA05222A	Rear Panel Ass'y (SR-4 (Australia))	1				
	HA05221A	Rear Panel Ass'y (SR-4 (Other))	1				
29	OJ05202C	Side Chassis	1				
30	BA06611A	IF Band Selector Switch P.C.B. Ass'y (SR-4 (Other))	1				
31	OJ05332A	Logic P.C.B. Holder L	1				
32	OJ05333A	Logic P.C.B. Holder R	1				
33	OJ05340B	P.C.B. Holder	1				
34	OJ05366A	Volume Damper	2				
35	BA06606A	Fuse P.C.B. Ass'y (SR-4A & SR-4 (Canada))	1				
	BA06813A	Fuse P.C.B. Ass'y (SR-4 (Australia))	1				
	BA06801A	Fuse P.C.B. Ass'y (SR-4 (Other))	1				
36	BA06607A	Pin Jack P.C.B. Ass'y	1				
37	BA06609A	Tuner P.C.B. Ass'y (SR-4A & SR-4 (Canada))	1				
	BA06620A	Tuner P.C.B. Ass'y (SR-4 (Australia))	1				
	BA06619A	Tuner P.C.B. Ass'y (SR-4 (Other))	1				
38	BA06610A	Logic P.C.B. Ass'y (SR-4A & SR-4 (Canada & Australia))	1				
	BA06621A	Logic P.C.B. Ass'y (SR-4 (Other))	1				
39	OJ05380A	P.C.B. Cushion	1				
L01	OE00612A	M3x6 @ Pan (2A)	9				
L02	OE00868A	BT3x8 @ Binding	25				
L03	—	Nut Hex. M9	(1)				
L04	—	Washer	(1)				
L05	—	Nut Hex. M7	(5)				
L06	—	Washer	(5)				
L07	OE00857A	BT3x6 @ Binding	2				
L08	OE03032A	BT4x8 @ Pan Washer-faced (Black Chromate)	4				
L09	OE03157A	BT3x8 @ Binding with Washer	7				
L10	OE03409A	Washer 3.2x5.7x1.2 (Copper)	1				
L11	OJ05294A	Washer 3.1x8x1 (Copper)	1				
L12	OE00921A	BT3x8 @ Binding (Black Chromate)	17				

4.4. Rear Panel Ass'y (B01)

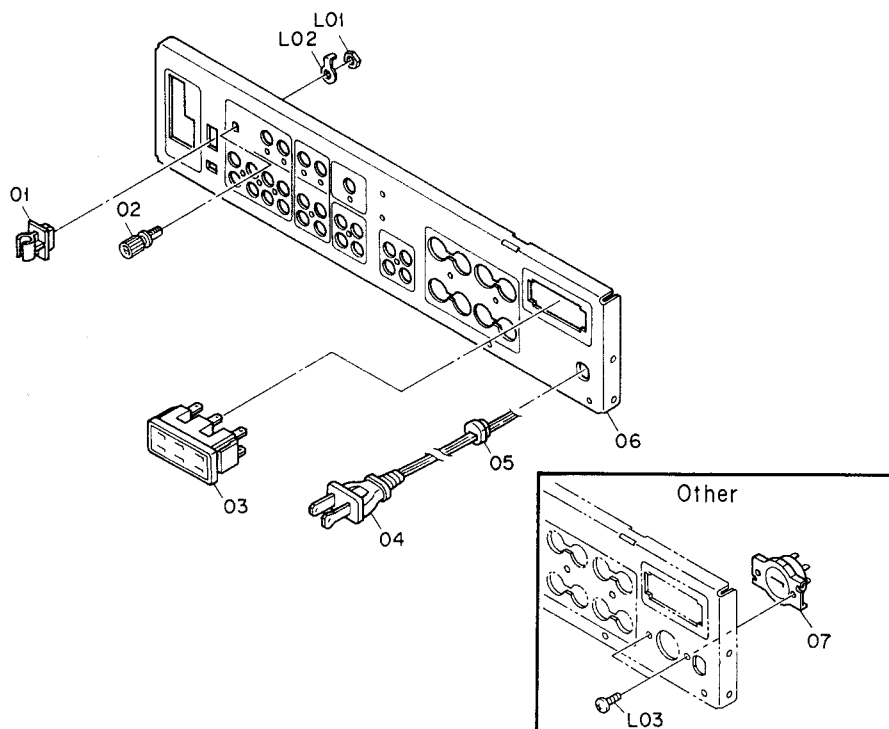


Fig. 4.4

Schematic Ref. No.	Part No.	Description	Q'ty
B01	HA05218A	Rear Panel Ass'y (SR-4A)	1
	HA05220A	Rear Panel Ass'y (SR-4 (Canada))	1
	HA05222A	Rear Panel Ass'y (SR-4 (Australia))	1
	HA05221A	Rear Panel Ass'y (SR-4 (Other))	1
	Serial No.: D10601001 -		
01	0B90071A	AM Loop Antenna Holder	1
02	0B81604A	Ground Terminal T-5435	1
03	0B81706A	AC Outlet 3P (SR-4A & SR-4 (Canada & Other))	1
04	0B90205A	Power Cord (SR-4A & SR-4 (Canada & Other))	1
	0B90269A	Power Cord (SR-4 (Australia))	1
05	0B08351A	Cord Bushing 4K-4 (SR-4A & SR-4 (Canada & Other))	1
	0B90273A	Cord Bushing 4K-4 (SR-4 (Australia))	1
06	0H05049A	Rear Panel (SR-4A)	1
	0H05045B	Rear Panel (SR-4 (Canada))	1
	0H05047A	Rear Panel (SR-4 (Australia))	1
	0H05046A	Rear Panel (SR-4 (Other))	1
07	0B70049A	Voltage Selector (SR-4 (Other))	1
L01	—	Nut Ground Terminal	(1)
L02	—	Earth Lug (Ground Terminal)	(1)
L03	0E00985A	M3x6 ⊕ Binding (SR-4 (Other))	2

5. MOUNTING DIAGRAM AND PARTS LIST

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.

2. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.

3. Following transistors are interchangeable with each other.

a. 2SA733, 2SA608SP, 2SA1048, 2SA1175

b. 2SC945, 2SC536SP, 2SC2458, 2SC2785

4. Abbreviation for part name:

TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode, Varicap — Variable Capacitance Diode

RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor, RW — Wire Wound Resistor

CE — Electrolytic Capacitor, CM — Mylar Capacitor, CC — Ceramic Capacitor, CP — PP Capacitor

CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor

5.1. Power Switch P.C.B. Ass'y

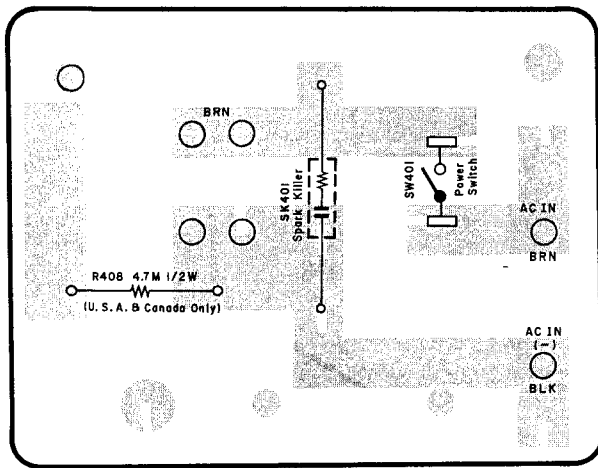


Fig. 5.1

5.2. AC Outlet P.C.B. Ass'y

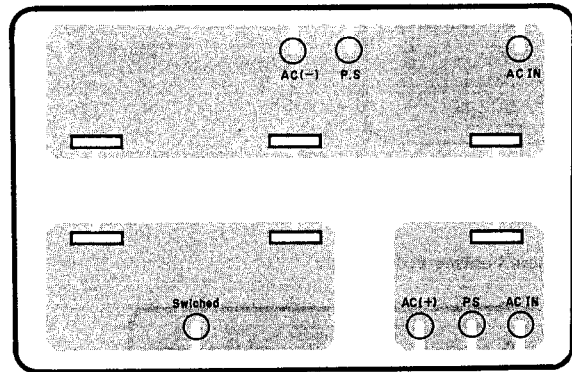


Fig. 5.2

5.3. Power Indicator P.C.B. Ass'y

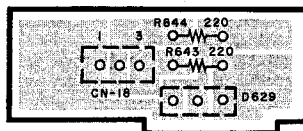


Fig. 5.3

5.4. Pin Jack P.C.B. Ass'y

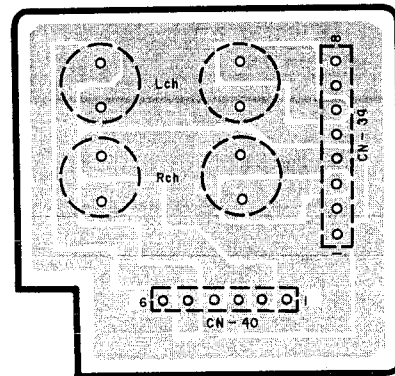


Fig. 5.4

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R408	BA06605A	Power Switch P.C.B. Ass'y (SR-4A & SR-4 (Canada))		OB08240A	Spark Killer Q-J0187B (SR-4 (Australia & Other))		BA06645A	Power Indicator P.C.B. Ass'y
	BA06615A	Power Switch P.C.B. Ass'y (SR-4 (Australia))		OB82994A	PD Connector V430 BRN (1)		OB60449A	Power Indicator P.C.B.
	BA06807A	Power Switch P.C.B. Ass'y (SR-4 (Other))		OB82995A	PD Connector V430 BLK (1)		OB12421A	LED SRP-56DWF (GRN/LED)
	OB60443A	Power Switch P.C.B. RK 4.7M 1/2W J (SR-4A & SR-4 (Canada))		OE00037A	Earth Lug B-5 (SR-4A & SR-4 (Canada)) (1)		OB09661A	RK 220 1/6W J 3P Connector RED
SW401	OB20057A	Power Switch P.C.B. Spark Killer ECQ-JC187C (SR-4A & SR-4 (Canada))		OE00752A	Eyelet 2x3 (SR-4 (Australia)) (1)	R643,644 CN18	OB82958A	
	OB71006A	Power Switch SDL1P Spark Killer		BA06601A	AC Outlet P.C.B. Ass'y (SR-4A & SR-4 (Canada & Other))		BA06607A	Pin Jack P.C.B. Ass'y
SK401	OB08342A	Spark Killer ECQ-JC187C (SR-4A & SR-4 (Canada))		OB60448A	AC Outlet P.C.B. Eyelet 2x3 (1)	CN39,40	OB60435A	Pin Jack P.C.B. Dip Mate 6P WH6D-
							OB81013A	4P Pin Jack VH6D-1 (1)

5.11. Tone Control P.C.B. Ass'y

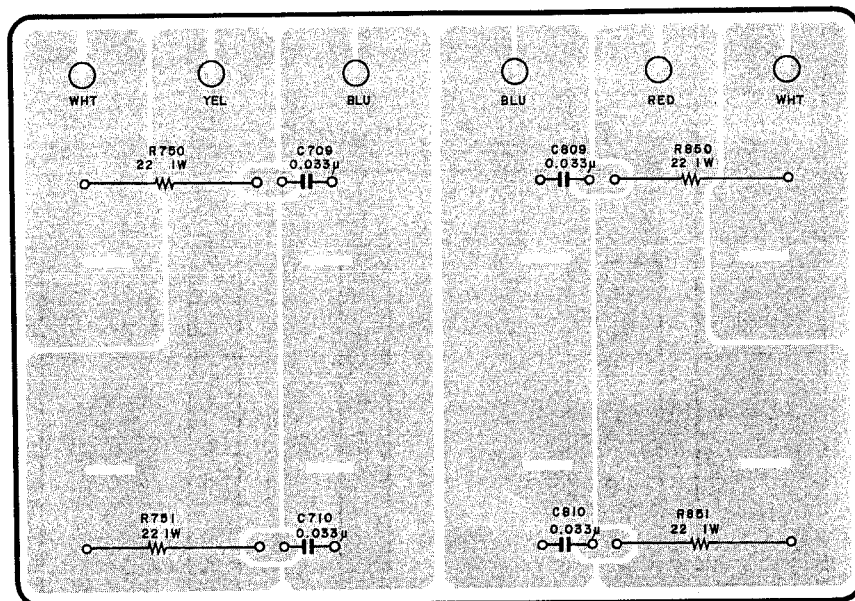


Fig. 5.10

5.11. Tone Control P.C.B. Ass'y

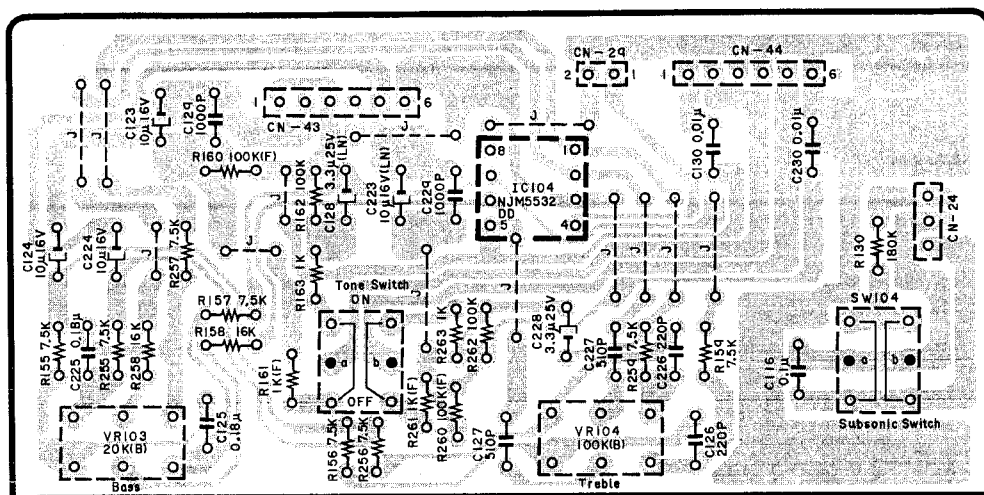
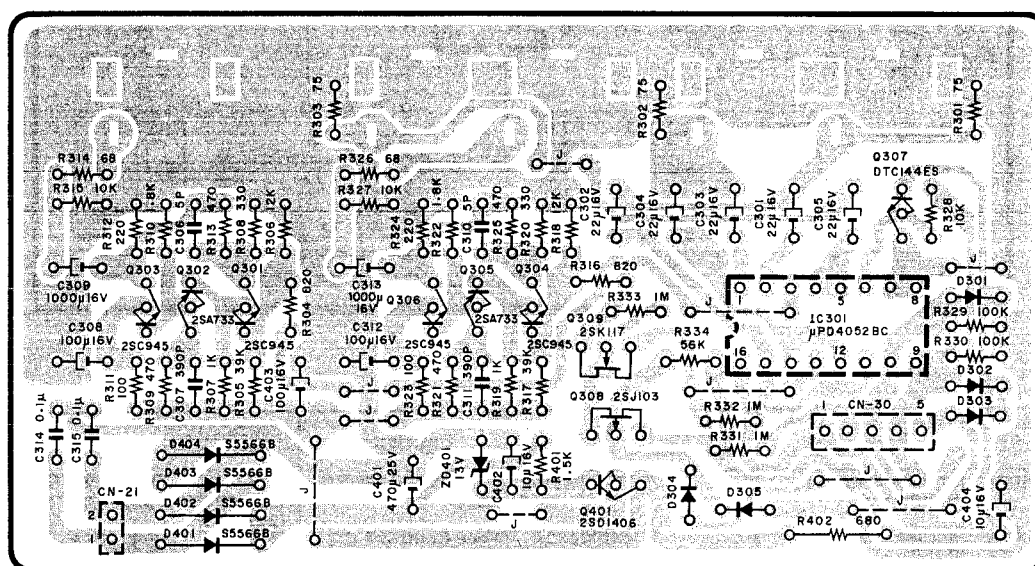


Fig. 5.11

14

5.13. Video Amp. P.C.B. Ass'y



15

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R407 SK402 F403,404 F405 F406 F407 CN21	BA06606A	Fuse P.C.B. Ass'y (SR-4A & SR-4 (Canada))	IC301 Q301,303 304,306 Q302,305 Q307 Q308 Q309 Q401 D301-305 D401-404 ZD401 R301,302 303 R304,316 R305,317 R306,318 R307,319 R308,320 R309,313 321,325 R310,322 R311,323 R312,324 R314,326 R315,327 328 R329,330 R331,332 333 R334 R401 R402 C301,302 303,304 305 C306,310 C307,311 C308,312 403 C309,313 C314,315 C401 C402,404 CN21 CN30	BA06602A	Video Amp. P.C.B. Ass'y
	BA06813A	Fuse P.C.B. Ass'y (SR-4 (Australia))		OB60389E	Video Amp. P.C.B.
	BA06801A	Fuse P.C.B. Ass'y (SR-4 (Other))		OB11247A	IC μ PD4052BC
	OB60447A	Fuse P.C.B.		OB01872A	TR 2SC945L (P,Q)
	OB24145A	RC 10 2W		OB06013A	TR 2SA733 (P,Q)
	OB08342A	Spark Killer		OB10062A	TR DTC144ES
		ECQ-JC187C (SR-4A & SR-4 (Canada))		OB10211A	FET 2SJ103
	OB08240A	Spark Killer		OB06129A	FET 2SK117 (Y)
		Q-J0187B (SR-4 Australia & Other))		OB06452A	TR 2SD1406 (Y)
	OB90248A	Fuse 6A (SR-4A & SR-4 (Canada & Other))		OB06398A	SiD 1SS176 (5)
		Fuse T3.15A 250V (SR-4 (Australia))		OB12362A	SiD S5566B (4)
	OB08281A	Fuse 2A (SR-4A & SR-4 (Canada & Other))		OB12317A	ZD 13V MTZ13B
	OB08525A	Fuse T1.25A 250V (SR-4 (Australia))		OB09650A	RK 75 1/6W J
	OB02240A	Fuse 1A (SR-4A & SR-4 (Canada & Other))		OB09675A	RK 820 1/6W J
	OB08374A	Fuse T315mA 250V (SR-4 (Australia))		OB09715A	RK 39K 1/6W J
	OB08263U	Fuse 0.5A (SR-4A & SR-4 (Canada & Other))		OB09703A	RK 12K 1/6W J
	OB08698A	Fuse T250mA 250V (SR-4 (Australia))		OB09677A	RK 1K 1/6W J
		2P Connector WHT		OB09665A	RK 330 1/6W J
	OB81634A	2P-T Post (1)		OB09669A	RK 470 1/6W J
	OB81740A	6P Terminal (SR-4A & SR-4 (Canada)) (1)		OB09683A	RK 1.8K 1/6W J
	OB81722A	4P Terminal (SR-4 (Australia & Other)) (1)		OB09653A	RK 100 1/6W J
		3P-T Post L Angle (4)		OB09661A	RK 220 1/6W J
	OB08349B	Fuse Clip (SR-4 (Australia)) (10)		OB09649A	RK 68 1/6W J
	OM04137A	Fuse Label T250mA (SR-4 (Australia)) (1)		OB09701A	RK 10K 1/6W J
	OM04194A	Fuse Label T315mA (SR-4 (Australia)) (1)		OB09725A	RK 100K 1/6W J
	OM04391A	Fuse Label T1.25A (SR-4 (Australia)) (1)		OB09749A	RK 1M 1/6W J
	OM04443A	Fuse Label T3.15Ax2 (SR-4 (Australia)) (1)		OB09719A	RK 56K 1/6W J
				OB09681A	RK 1.5K 1/6W J
				OB05794A	RK 680 1/4W J
				OB01862A	CE 22 μ 16V
				OB09276A	CC 5P 50V
				OB41002A	CP 390P 100V J
				OB01400A	CE 100 μ 16V
				OB40082A	CE 1000 μ 16V
				OB41298A	CMM 0.1 μ 50V J
				OB40094A	CE 470 μ 25V
				OB01412A	CE 10 μ 16V
				OB81223A	2P-T Post (WHT)
				OB81235A	5P-T Post (WHT)
				OB81592B	Pin Jack 1P (5)

The schematic diagram illustrates the internal circuitry of a portable cassette player. Key components include:

- Resistors:** R901 (150), R902 (3.3K), R903 (3.3K), R904 (220), R905 (3.3K), R906 (3.3K), R907 (3.3K), R908 (3.3K).
- Capacitors:** C901 (100), C902 (100), C903 (100).
- Diodes:** D901 (1N4148), D902 (1N4148), D903 (1N4148).
- Transistors:** Q901 (2N3904), Q902 (2N3904), Q903 (2N3904).
- Integrated Circuits:** IC901 (MC911), IC902 (MC911), IC903 (MC911).
- Switches:** SW901 (Memory), SW902 (AM), SW903 (FM), SW904 (Auto), SW905 (1/6), SW906 (2/7), SW907 (3/8), SW908 (4/9), SW909 (5/10), SW910 (Auto), SW911 (Auto), SW912 (Auto), SW913 (Auto).
- LEDs:** LED908, LED909, LED910, LED911, LED912, LED913, LED914, LED916.
- Connectors:** CN-13 (Headphones), CN-14 (Cassette Deck), CN-16 (Speaker).

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06593A	Control Switch P.C.B. Ass'y		BA06592A	Display P.C.B. Ass'y (SR-4A & SR-4 (Canada))
	OB60442A	Control Switch P.C.B.		OB60441A	Display P.C.B.
Q901,902	OB10058A	TR DTA114ES	IC951	OB11244A	IC LB1413N
905,906			IC952	OB11160A	IC TD6301A
907,908			IC953	OB11248A	IC ICP-N5-T104
Q903,904	OB10068A	TR DTC114ES	IC954	OB19005A	IC BX-1419
D901	OB06181A	SiD 1SS53	Q951,952	OB10068A	TR DTC114ES
D902,903	OB12391A	SiD MC911	955,956		
904,905			Q953	OB06013A	TR 2SA733 (P,Q)
D907	OB06398A	SiD 1SS176	Q954	OB10053A	TR DTA144ES
LED908-916	OB12395A	LED SLR-34PC3F P-Green (9)	Q957,958	OB10060A	TR DTA143ES
R901	OB09657A	RK 150 1/6W J	D950	OB12414A	Display SL7823-03
R902,903	OB09689A	RK 3.3K 1/6W J	D951	OB06181A	SiD 1SS53
906			R951,952	OB05641A	RK 47K 1/4W J
R904,911	OB09661A	RK 220 1/6W J	R953	OB01888A	RK 10K 1/4W J
R907,908	OB01681A	RK 3.3K 1/4W J	R954	OB01857A	RK 1K 1/4W J
909			R955,989	OB05959A	RK 75 1/4W J
R910	OB05795A	RK 150 1/4W J	R956	OB20415A	RK 43 1/4W J
SW901-913	OB70062A	Tact Switch KHH10910 (13)	R957,958	OB20416A	RK 110 1/4W J
CN13	OB82953A	12P Connector	987,988	OB01933A	RK 220 1/4W J (25)
CN14	OB82954A	5P Connector	R959-982	OB40009A	CE 10μ 16V
CN16	OB82956A	3P Connector	990	OB41787A	CC 0.022μ 25V Z
	OJ05209B	LED Reflector (9)	C951,952	OB41555A	CC 0.047μ 25V Z
			C953	OB82950A	6P Connector RED
			C954	OB82951A	6P Connector WHT
			CN10	OB82955A	6P Connector BLK
			CN11	OE00846A	BT3x8 @Pan (2)
			CN15		
				BA06646A	Display P.C.B. Ass'y (SR-4 (Australia & Other))
				OB60441A	Display P.C.B.
			IC951	OB11244A	IC LB1413N
			IC952	OB11160A	IC TD6301A
			IC953	OB11248A	IC ICP-N5-T104
			IC954	OB19005A	IC BX-1419
			Q951,952	OB10068A	TR DTC114ES
			955,956		
			Q953	OB06013A	TR 2SA733 (P,Q)
			Q954	OB10053A	TR DTA144ES
			Q957,958	OB10060A	TR DTA143ES
			Q959,961	OB10068A	TR DTC114ES
			962		
			Q960	OB01872A	TR 2SC945L (P,Q)
			D950	OB12414A	Display SL7823-03
			D951	OB06181A	SiD 1SS53
			D952,953	OB06398A	SiD 1SS176
			R951,952	OB05641A	RK 47K 1/4W J
			R953	OB01888A	RK 10K 1/4W J
			R954	OB01857A	RK 1K 1/4W J
			R955,989	OB05959A	RK 75 1/4W J
			R956	OB20415A	RK 43 1/4W J
			R957,958	OB20416A	RK 110 1/4W J
			984-988		(7)
			R959-983	OB01933A	RK 220 1/4W J (26)
			990		
			R991	OB01846A	RK 4.7K 1/4W J
			R992	OB09693A	RK 4.7K 1/6W J
			C951,952	OB40009A	CE 10μ 16V
			C953	OB41787A	CC 0.022μ 25V Z
			C954	OB41555A	CC 0.047μ 25V Z
			CN10	OB82950A	6P Connector RED
			CN11	OB82951A	6P Connector WHT
			CN15	OB82955A	6P Connector BLK
				OE00846A	BT3x8 @Pan (2)

5.15. Display P.C.B' Ass'y
(1) For SR-4A and SR-4 (Canada)

(2) For SR-4 (Australia & Other)

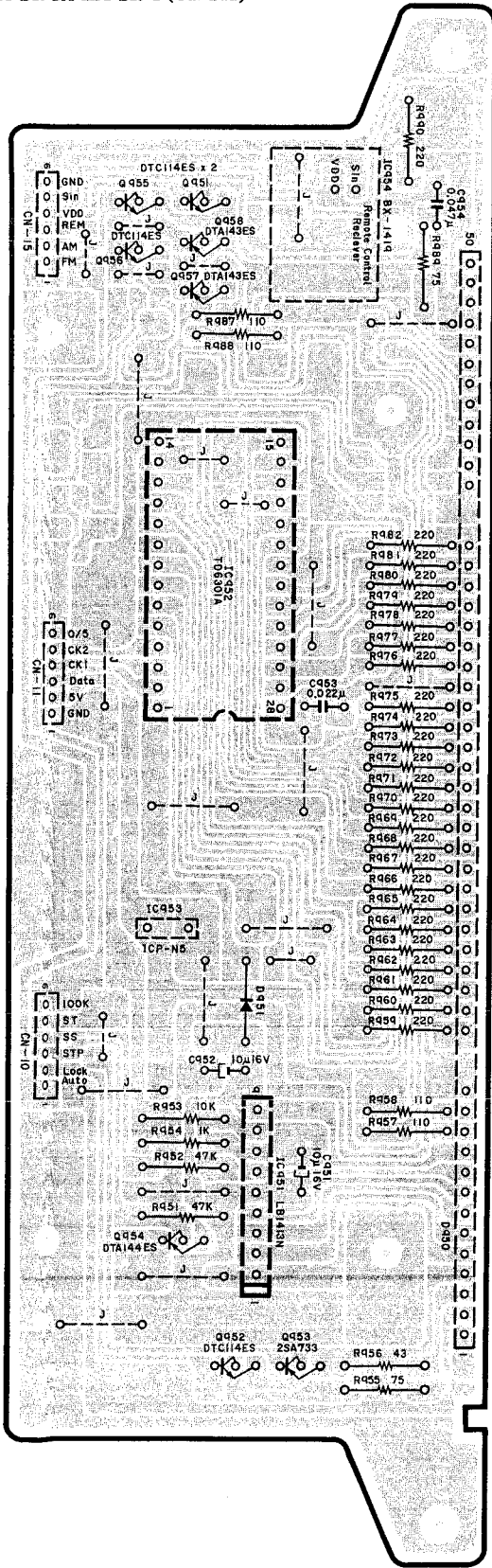


Fig. 5.15.1

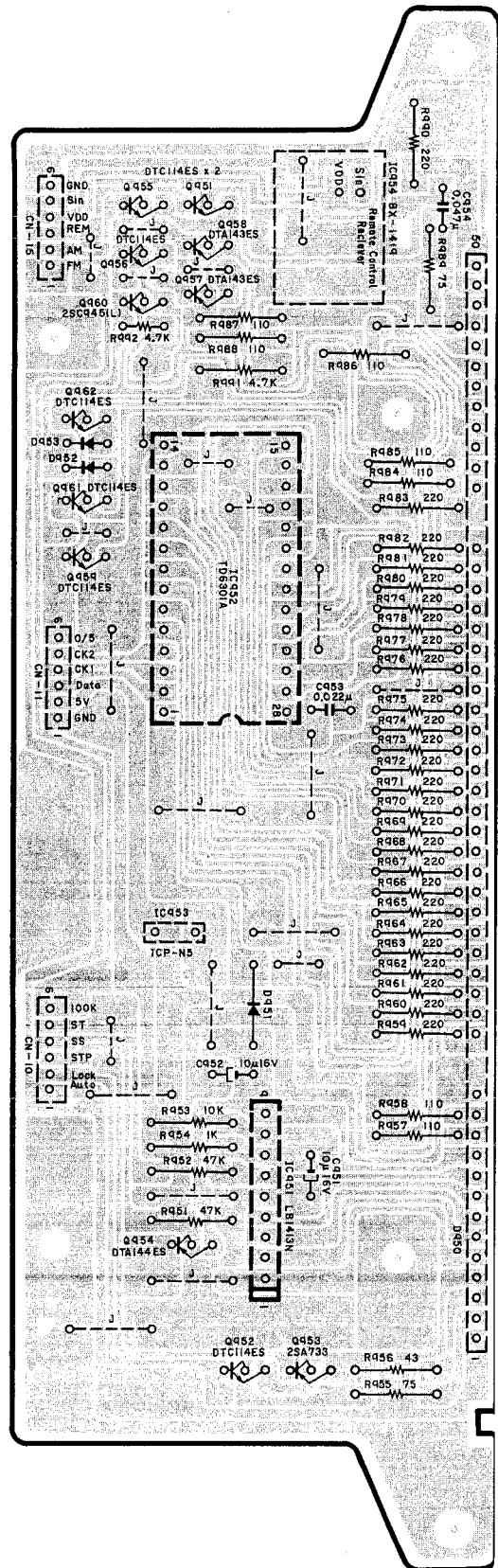


Fig. 5.15.2

5.16. Power Supply P.C.B. Ass'y

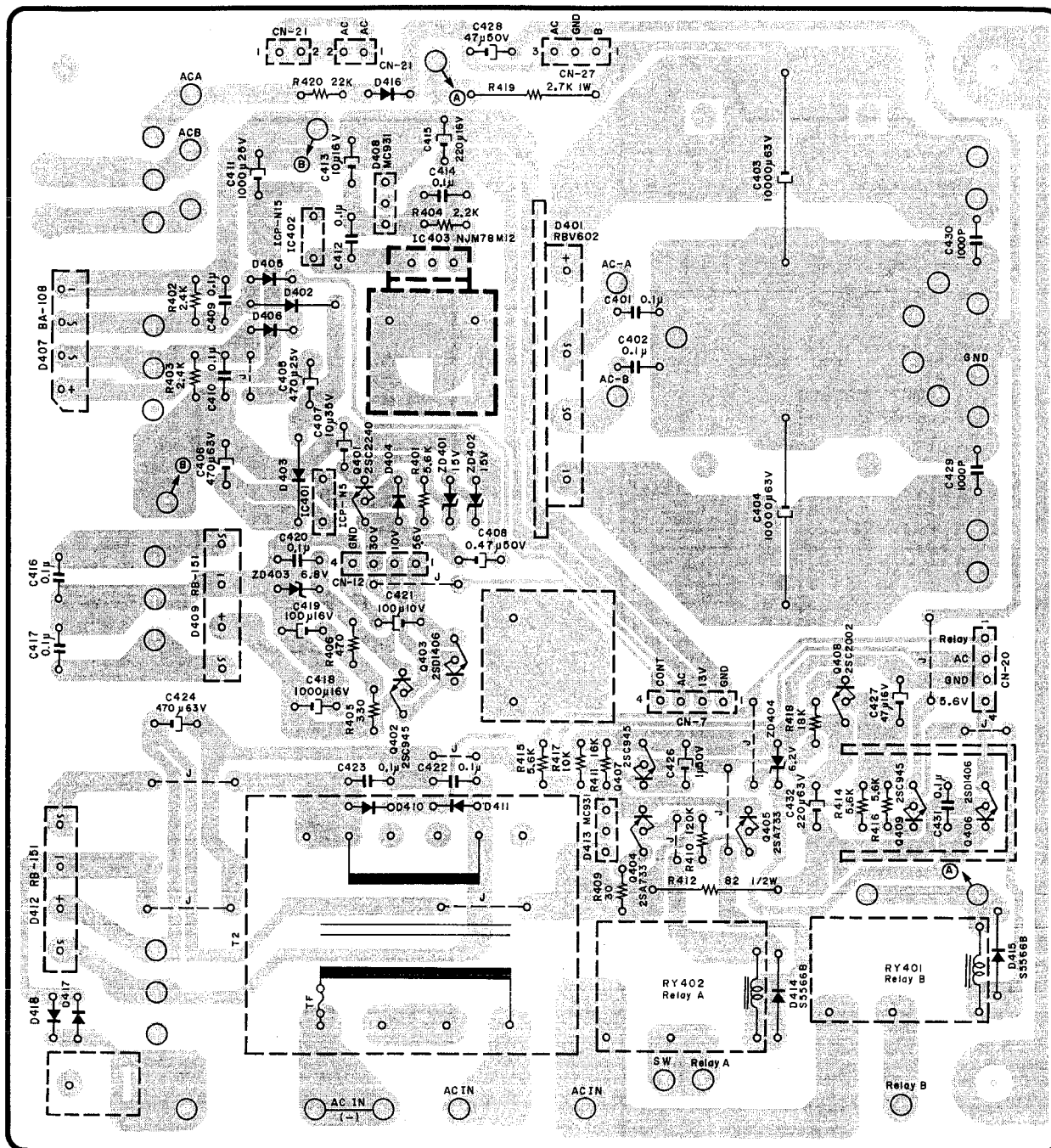


Fig. 5.16

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06599A	Power Supply P.C.B. Ass'y		OB82997A	PD Connector V150 RED (1)
	OB60440A	Power Supply P.C.B.		OB82998A	PD Connector V150 ORN (1)
IC401	OB11248A	IC ICP-N5-T104		OB82999A	PD Connector V150 YEL (2)
IC402	OB11335A	IC ICP-N15-T104		OB83003A	PD Connector V230 BLU (2)
Q401	OB10078A	TR 2SC2240 (GR)		OB80122A	Vinyl Tube (1)
Q402,407	OB01872A	TR 2SC945L (P,Q)		OB83000A	GND Cable V070 BLU (1)
409				OB90019A	Insu-Lock SKB80 (7)
Q404,405	OB06013A	TR 2SA733 (P,Q)		OB90206A	Insu-Lock SKB4M (1)
Q408	OB06322A	TR 2SC2002 (K,L)		0E03355A	Earth Lug MET31-0113 (1)
D402,403	OB12362A	SiD S5566B		0J05309A	BS Damper 1VR (1)
414,415				0J05362A	Earth Plate (1)
D404,405	OB06398A	SiD 1SS176		OB11252A	IC 78M12
406,410				0E00612A	M3x6 @Pan (2A) (1)
411,416				0J05351A	TR Heat Sink (1)
417,418				OB06452A	TR 2SD1406 (Y)
D407	OB06282A	SiD DBA10B.C.	IC403	0E00612A	M3x6 @Pan (2A) (1)
D408,413	OB12420A	SiD MC93		0J05351A	TR Heat Sink (1)
D409,412	OB06183A	SiD RB-151	Q403	OB06452A	TR 2SD1406 (Y)
ZD401,402	OB12464A	ZD 15V UTZJ15C		0E00612A	M3x6 @Pan (2A) (1)
ZD403	OB12440A	ZD 6.8V UTZJ6.8C		0J05351A	TR Heat Sink (1)
ZD404	OB12437A	ZD 6.2V UTZJ6.2C	Q406	OB06452A	TR 2SD1406 (Y)
RY401	OB90250A	Relay 24V G6C-1117P		OB08680B	Heat Sink A (1)
RY402	OB90249A	Relay 12V G6C-1117P		0E00972A	Nut Hex, M3 (1)
T2	OB50090A	Power Transformer		0E03319A	M3x8 @Binding (1)
R401,414	OB09695A	RK 5.6K 1/6W J	D401	OB12388A	SiD RBV-602
415,416				0E03030A	M3x6 @Binding (1)
R402,403	OB09686A	RK 2.4K 1/6W J		0J05335B	SiD Heat Sink (1)
R404	OB09685A	RK 2.2K 1/6W J			
R405	OB09665A	RK 330 1/6W J			
R406	OB09669A	RK 470 1/6W J			
R409	OB09640A	RK 30 1/6W J			
R410	OB09655A	RK 120 1/6W J			
R411	OB09706A	RK 16K 1/6W J			
R412	OB09253A	RF 82 1/2W J			
R417	OB09701A	RK 10K 1/6W J			
R418	OB09707A	RK 18K 1/6W J			
R419	OB24061A	RF 2.7K 1W J			
R420	OB09709A	RK 22K 1/6W J			
C401,402	OB41298A	CMM 0.1μ 50V J			
409,410					
412,414					
416,417					
420,422					
423,431					
C403,404	OB40454A	CE 10000μ 63V			
C405	OB40094A	CE 470μ 25V			
C406,424	OB40134A	CE 470μ 63V			
C407	OB40100A	CE 10μ 35V			
C408	OB40462A	CE 0.47μ 50V			
C411	OB40095A	CE 1000μ 25V			
C413,426	OB01412A	CE 10μ 16V			
C415	OB40079A	CE 220μ 16V			
C418	OB40082A	CE 1000μ 16V			
C419	OB40078A	CE 100μ 16V			
C421	OB40464A	CE 100μ 10V			
C427	OB40077A	CE 47μ 16V			
C428	OB40115A	CE 4.7μ 50V			
C429,430	OB41791A	CSP 1000P 50V J			
C432	OB40132A	CE 220μ 63V			
CN7	OB82947A	4P Connector WHT			
CN12	OB82952A	4P Connector WHT			
CN20	OB82960A	4P Connector RED			
CN27	OB82967A	3P Connector RED			
	OB82983A	PD Connector V340 RED (1)			
	OB82984A	PD Connector V340 WHT (1)			
	OB82985A	PD Connector V290 RED (1)			
	OB82986A	PD Connector V290 WHT (1)			
	OB82987A	PD Connector V330 BLU (1)			
	OB82988A	PD Connector V300 BLU (2)			
	OB82990A	PD Connector V260 YEL (1)			
	OB82991A	PD Connector V150 RED (2)			
	OB82992A	PD Connector V150 WHT (1)			
	OB82993A	PD Connector V100 BLU (1)			
	OB82996A	PD Connector V150 BLK (2)			

5.17. Logic P.C.B. Ass'y

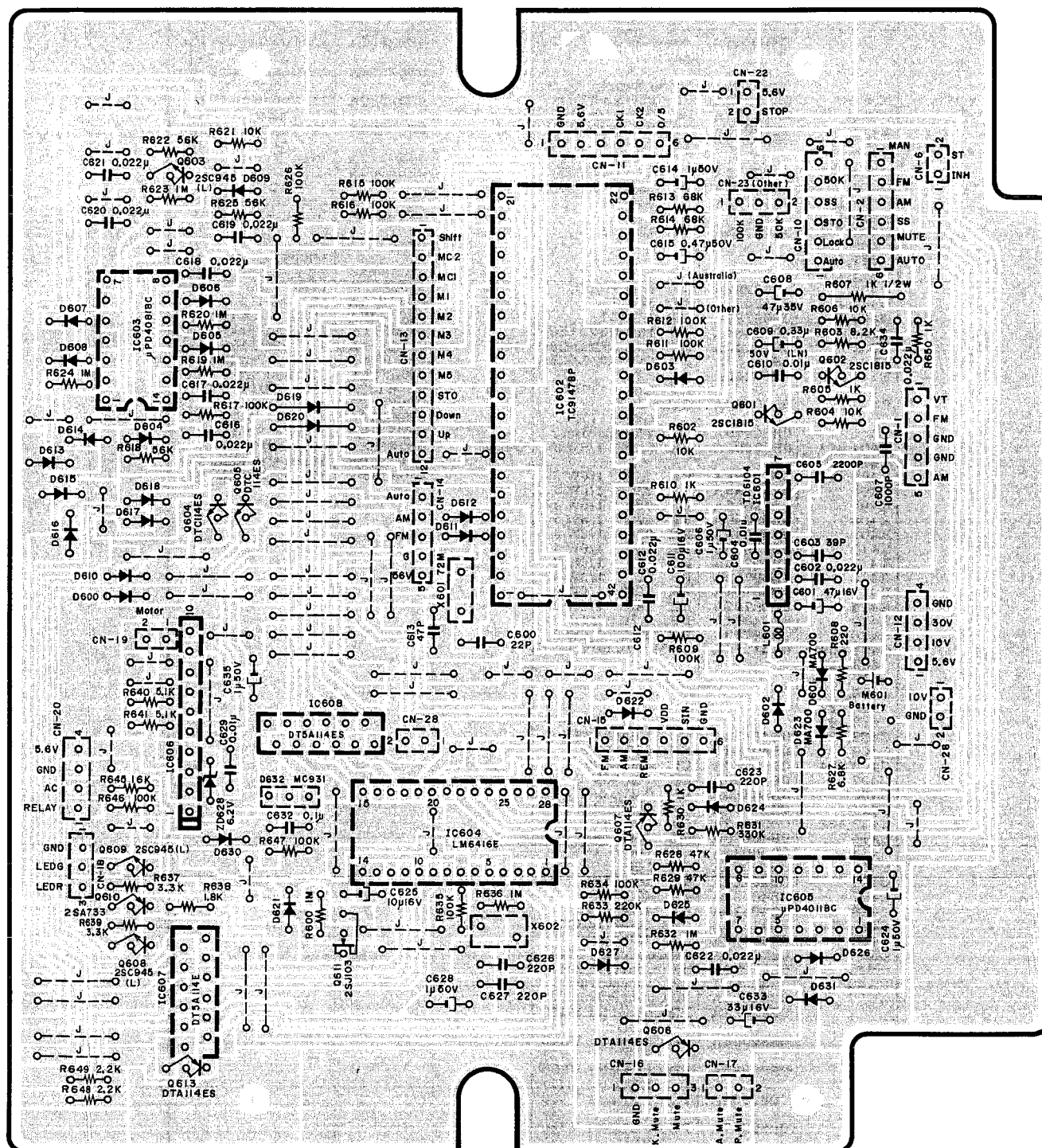


Fig. 5.17

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06610A	Logic P.C.B. Ass'y (SR-4A & SR-4 (Canada & Australia))	C622	OB41290A	CMM 0.022μ 50V J
	BA06621A	Logic P.C.B. Ass'y (SR-4 (Other))	C623	OB41278A	CMM 2200P 50V J
			C625	OB01412A	CE 10μ 16V
			C626,627	OB41734A	CC 220P 50V J
			C633	OB40076A	CE 33μ 16V
			CN1	OB81238A	5P-T Post YEL
			CN2	OB81242A	6P-T Post YEL
			CN6	OB81226A	2P-T Post YEL
			CN10	OB81241A	6P-T Post RED
			CN11	OB81239A	6P-T Post WHT
			CN12	OB81231A	4P-T Post WHT
			CN13	OB81263A	12P-T Post WHT
			CN14	OB81235A	5P-T Post WHT
			CN15	OB81240A	6P-T Post BLK
			CN16	OB81230A	3P-T Post YEL
			CN17	OB81223A	2P-T post WHT
			CN18	OB81229A	3P-T Post RED
			CN19	OB81225A	2P-T Post RED
			CN20	OB81233A	4P-T Post RED
			CN22	OB81224A	2P-T Post BLK
			CN23	OB81227A	3P-T Post WHT (SR-4 (Other))
			CN28	OB82979A	2P Connector
IC601	OB60439A	Logic P.C.B.			
IC602	OB11159A	IC TD6104			
IC603	OB11161A	IC TC9147BP			
IC604	OB06219A	IC μPD4081BC			
IC605	OB11279A	IC LM6416E			
IC606	OB06178A	IC μPD4011BC			
IC607,608	OB11250A	IC LB1645N			
Q601,602	OB11334A	IC DT5A114E			
Q603,608	OB10088A	TR 2SC1815L (GR)			
609	OB01872A	TR 2SC945L (P,Q)			
Q604,605	OB10068A	TR DTC114ES			
Q606,607	OB10058A	TR DTA114ES			
613					
Q610	OB06013A	TR 2SA733 (P,Q)			
Q611	OB10211A	FET 2SJ103 (GR,BL)			
D600	OB06398A	SiD 1SS176 (26)			
602-618					
621,622					
624,625					
626,627					
630,631					
D601,623	OB12363A	SiD MA700			
D619,620	OB06181A	SiD 1SS53			
D632	OB12420A	SiD MC931			
ZD628	OB12437A	ZD 6.2V UTZJ6.2C			
L601	OB51239A	Micro Coil			
X601	OB92006A	LAL02T220K			
X602	OB02307A	Crystal 7.2MHz			
M601	OB40241A	FYX-TE725S17			
R600,619	OB09749A	Resonator 800kHz			
620,623		KBR800H			
624,632		Lithium Battery 3V			
636		CR2330-1GV5			
R602,604	OB09701A	RK 1M 1/6W J			
606,621					
R603	OB09699A	RK 10K 1/6W J			
R605,610	OB09677A	RK 8.2K 1/6W J			
630,650		RK 1K 1/6W J			
R607	OB24114A	RK 1K 1/2W J			
R608	OB09661A	RK 220 1/6W J			
R609,611	OB09725A	RK 100K 1/6W J			
612,615					
616,617					
626,634					
635,646					
647					
R613,614	OB09721A	RK 68K 1/6W J			
R618,622	OB09719A	RK 56K 1/6W J			
625					
R627	OB09697A	RK 6.8K 1/6W J			
R628,629	OB09717A	RK 47K 1/6W J			
R631	OB09737A	RK 330K 1/6W J			
R633	OB09733A	RK 220K 1/6W J			
R637,639	OB09689A	RK 3.3K 1/6W J			
R638	OB09683A	RK 1.8K 1/6W J			
R640,641	OB09694A	RK 5.1K 1/6W J			
R645	OB09706A	RK 16K 1/6W J			
R648,649	OB09685A	RK 2.2K 1/6W J			
C600	OB41708A	CC 22P 50V J			
C601	OB01403A	CE 47μ 16V			
C602,612	OB41787A	CC 0.022μ 25V Z			
616-621		(9)			
634					
C603	OB41187A	CC 39P 50V J			
C604,629	OB41553A	CC 0.01μ 25V Z			
C605	OB09586A	CC 2200P 50V K			
C606,614	OB01405A	CE 1μ 50V			
624,628					
635					
C607	OB09288A	CC 1000P 50V K			
C608	OB40103A	CE 47μ 35V			
C609	OB09327A	CE 0.33μ 50V (LN)			
C610,632	OB41298A	CMM 0.1μ 50V J			
C611	OB01400A	CE 100μ 16V			
C613	OB41709A	CC 47P 50V J			
C615	OB40111A	CE 0.47μ 50V			

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06609A	Tuner P.C.B. Ass'y (SR-4A & SR-4 (Canada))	VR501	OB32086A	Semi VR 100K (B)
	— FM —		R501,516	OB09677A	RK 1K 1/6W J
			R502,504	OB09725A	RK 100K 1/6W J
			518		
			R503,508	OB09685A	RK 2.2K 1/6W J
			517		
IC301	OB11156A	IC TA7060AP	R505	OB09665A	RK 330 1/6W J
IC302	OB11157A	IC LA1235	R506	OB09661A	RK 220 1/6W J
Q301	OB10127A	FET 2SK241 (GR)	R507	OB09681A	RK 1.5K 1/6W J
Q302	OB10174A	TR 2SC2669 (O,Y)	R509	OB09674A	RK 750 1/6W J
Q303,304	OB01872A	TR 2SC945L (P,Q)	R510	OB09651A	RK 82 1/6W J
305			R511	OB09733A	RK 220K 1/6W J
D301,302	OB06398A	SiD 1SS176	R512,513	OB09701A	RK 10K 1/6W J
303,304			515		
305,306			R514	OB09708A	RK 20K 1/6W J
VR301,303	OB32084A	Semi VR 47K (B)	CF501	OB41701A	Ceramic Filter
VR302	OB32080A	Semi VR 10K (B)			SFZ450G3L
L301,302	OB51239A	Micro Coil 22μH	CF502	OB92003A	Resonator 450 kHz
303,304					BFU450C4N
L305	OB51240A	FM Det. Coil A	CT502,506	OB42005A	C Trimmer 20P
L306	OB51241A	FM Det. Coil B	C501,505	OB41787A	CC 0.022μ 25V Z
L307,308	OB51243A	Choke Coil	508,509		
FE301	OB91016A	Front-end	511,512		
R301	OB09725A	RK 100K 1/6W J	514,515		
R302	OB09721A	RK 68K 1/6W J	517,522		
R303,325	OB09727A	RK 120K 1/6W J	526		
R304,318	OB09677A	RK 1K 1/6W J	C504	OB41401A	CP 430P 50V J
324,329			C510,513	OB41007A	CC 1000P 25V M
R305	OB09745A	RK 680K 1/6W J	519		
R306,311	OB09665A	RK 330 1/6W J	C516	OB41711A	CC 82P 50V K
317			C518,529	OB01403A	CE 47μ 16V
R307,312	OB09645A	RK 47 1/6W J	C520,521	OB01402A	CE 4.7μ 25V
R308,313	OB09667A	RK 390 1/6W J	C523	OB40111A	CE 0.47μ 50V
315,316			C524	OB41553A	CC 0.01μ 25V Z
R309	OB09698A	RK 7.5K 1/6W J	C525	OB09372A	CE 2.2μ 50V
R310	OB09686A	RK 2.4K 1/6W J	C527	OB09586A	CC 2200P 50V K
R319,321	OB09701A	RK 10K 1/6W J	C528	OB41296A	CMM 0.068μ 50V J
R320	OB09719A	RK 56K 1/6W J		— Control —	
R322	OB09699A	RK 8.2K 1/6W J			
R323	OB25228A	RM 2.21K 1/6W F			
R326	OB09705A	RK 15K 1/6W J	IC651	OB06219A	IC μPD4081BC
R327	OB09669A	RK 470 1/6W J	Q651	OB01872A	TR 2SC945L (P,Q)
R328	OB09693A	RK 4.7K 1/6W J	Q652	OB10062A	TR DTC144ES
R330	OB09717A	RK 47K 1/6W J	Q653,660	OB10058A	TR DTA114ES
CF301,302	OB41700A	Ceramic Filter SFE10.7MX2H-A	661		
		C Trimmer 30P	Q654,655	OB10068A	TR DTC114ES
CT307	OB41614A	CC 0.022μ 25V Z	656,657		
C301,303	OB41787A		658,659		
305,306			D651,652	OB06398A	SiD 1SS176
308,309			658,660		
310,311			661,662		
312,316			663		
317,318			D659	OB06181A	SiD 1SS53
324,326			R651,654	OB01889A	RK 100K 1/4W J
329,335			R652,657	OB09701A	RK 10K 1/6W J
336,338			658		
620,622			R653	OB09707A	RK 18K 1/6W J
C302	OB41294A	CMM 0.047μ 50V J	R655,656	OB09717A	RK 47K 1/6W J
C304	OB40420A	CE 220μ 16V (LN)	C651	OB01405A	CE 1μ 50V
C313,314	OB41290A	CMM 0.022μ 50V J		— Miscellaneous —	
C315	OB40079A	CE 220μ 16V			
C319	OB01402A	CE 4.7μ 25V			
C321	OB09372A	CE 2.2μ 50V			
C323,327	OB01405A	CE 1μ 50V			
337			CN1	OB60438A	Tuner P.C.B.
C325	OB41071A	CC 100P 50V J	CN2	OB82941A	5P Connector YEL
C328	OB40066A	CE 330μ 10V	CN3	OB82942A	6P Connector YEL
C330,332	OB09280A	CC 47P 50V J	CN4	OB81227A	3P-T Post WHT
334			CN5	OB81230A	3P-T Post YEL
C331	OB41007A	CC 1000P 25V M	CN9	OB82945A	2P Connector WHT
C333	OB09379A	CC 560P 50V K	CN22	OB81238A	5P-T Post YEL
	OB81596A	Antenna Terminal F (1)	TP1,2	OB82962A	2P Connector BLK
	— AM —			OB81634A	2P-T Post
				OJ05326B	Earth Plate (1)
IC501	OB11243A	IC LA1247			
Q501	OB06129A	FET 2SK117 (Y)			
Q502	OB01872A	TR 2SC945L (P,Q)			
D501	OB12386A	Var-Cap. KV1226Y			
D502	OB12363A	SiD MA700			
D503	OB12420A	SiD MC931			
L501	OB51236A	Antenna Coil			
L502	OB51235A	Osc. Coil			
L503	OB51234A	AM IFT2			
L504	OB51233A	AM IFT1			
L505,506	OB51239A	Micro Coil LAL02TA220K			

5.18. Tuner P.C.B. Ass'y
(1) For SR-4A and SR-4 (Canada)

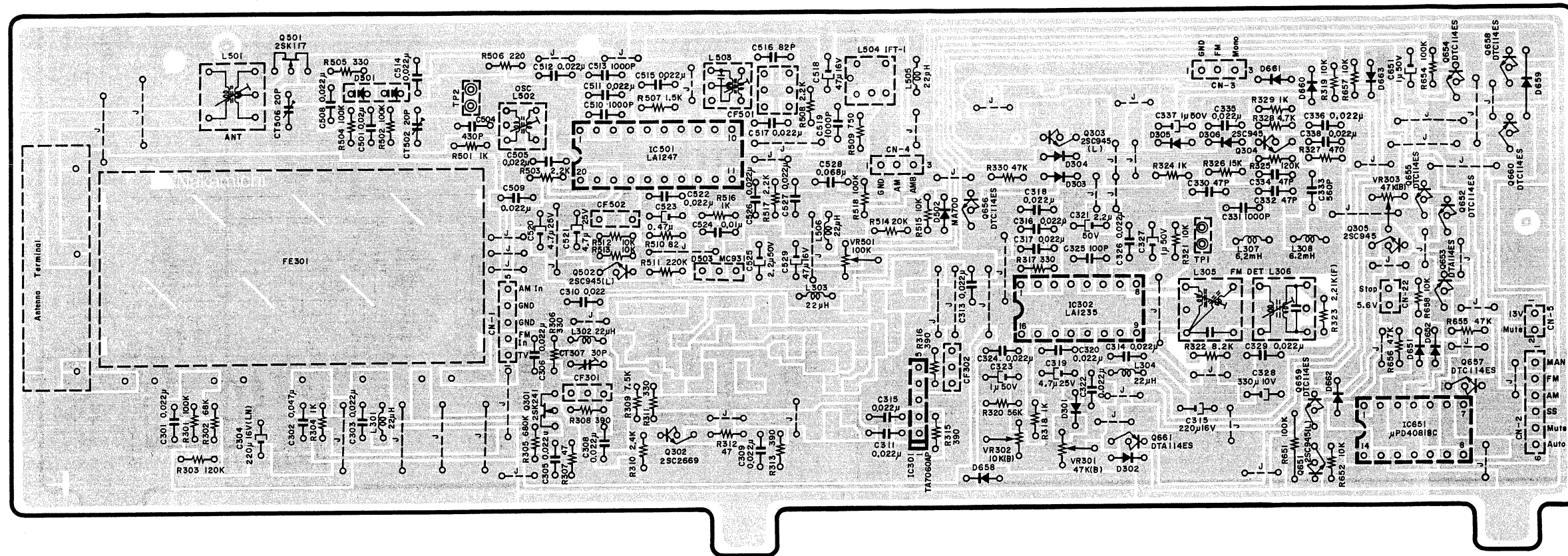


Fig. 5.18.1

(2) For SR-4 (Australia)

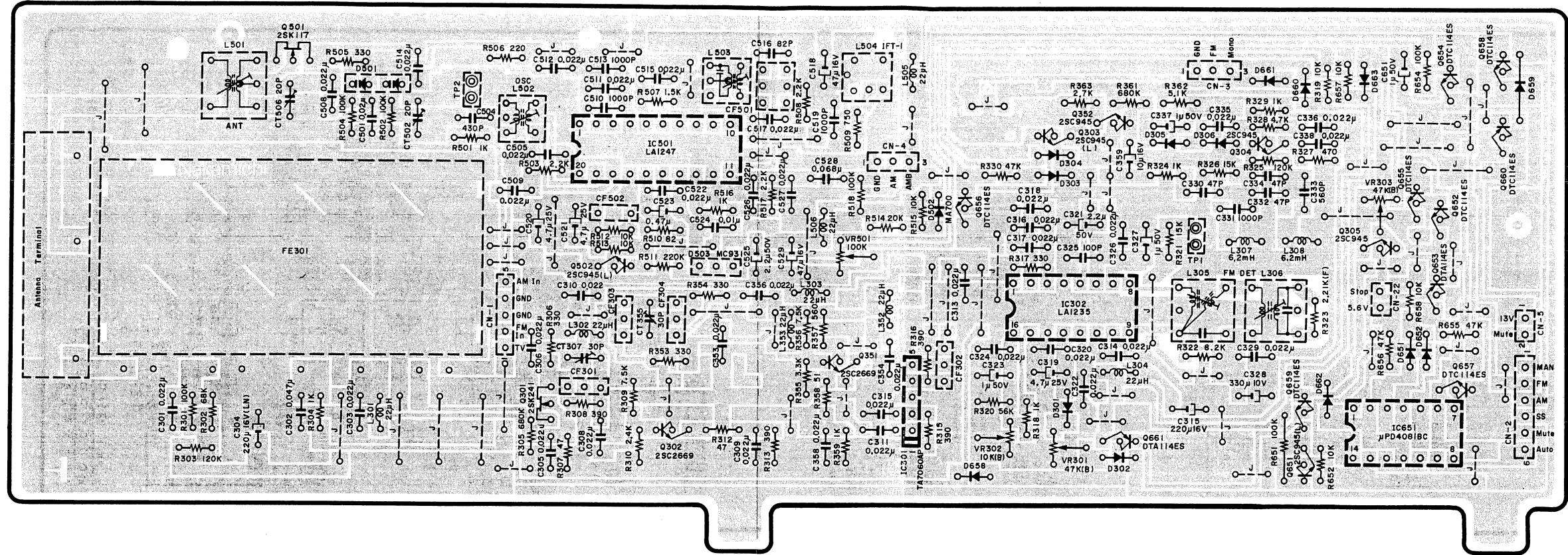


Fig. 5.18.2

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description		
IC301 IC302 Q301 Q302,351 Q303,304 305,352 D301,302 303,304 305,306 VR301,303 VR302 L301,302 303,304 352,353 L305 L306 L307,308 FE301 R301 R302 R303,325 R304,318 324,329 359 R305,361 R306,317 353,354 R307,312 R308,313 315,316 R309,356 R310	BA06620A	Tuner P.C.B. Ass'y (SR-4 (Australia))	R319 R320 R321,326 R322 R323 R327 R328 R330 R355 R357 R358 R362 R363 CF301,302	OB09701A OB09719A OB09705A OB09699A OB25228A OB09669A OB09693A OB09717A OB09689A OB09671A OB09646A OB09694A OB09687A OB41700A	RK 10K 1/6W J RK 56K 1/6W J RK 15K 1/6W J RK 8.2K 1/6W J RM 2.21K 1/6W F RK 470 1/6W J RK 4.7K 1/6W J RK 47K 1/6W J RK 3.3K 1/6W J RK 560 1/6W J RK 51 1/6W J RK 5.1K 1/6W J RK 2.7K 1/6W J Ceramic Filter SFE10.7MX2H-A Ceramic Filter SFE10.7MS3GH15A	C325 C328 C330,332 334 C331 C333 C359	OB41071A OB40066A OB09280A	CC 100P 50V J CE 330μ 10V CC 47P 50V J	R514 CF501 CF502	OB09708A OB41701A OB92003A	RK 20K 1/6W J Ceramic Filter SFZ450G3L Resonator 450 kHz BFU450C4N C Trimmer 20P CC 0.022μ 25V Z	D659 R651,654 R652,657 658 R653 R655,656 C651	OB06181A OB01889A OB09701A OB09707A OB09717A OB01405A	SiD 1SS53 RK 100K 1/4W J RK 10K 1/6W J RK 18K 1/6W J RK 47K 1/6W J CE 1μ 50V		
	— FM —		R330 R335 R357 R358 R362 R363 CF301,302	OB09699A OB09693A OB09717A OB09689A OB09671A OB09646A OB09694A OB09687A OB41700A	RK 470 1/6W J RK 4.7K 1/6W J RK 47K 1/6W J RK 3.3K 1/6W J RK 560 1/6W J RK 51 1/6W J RK 5.1K 1/6W J RK 2.7K 1/6W J	C331 C333 C359	OB41007A OB09379A OB09816A OB81596A	CC 1000P 25V M CC 560P 50V K CE 10μ 16V (LN) Antenna Terminal F (1)	CT502,506 C501,505 508,509 511,512 514,515 517,522 526 C504 C510,513 519 C516 C518,529 C520,521 C523 C524 C525 C527 C528	OB42005A OB41787A	OB42005A OB41787A	OB41401A OB41007A OB41711A OB01403A OB01402A OB40111A OB41553A OB09372A OB09586A OB41296A	CP 430P 50V J CC 1000P 25V M CC 82P 50V K CE 47μ 16V CE 4.7μ 25V CE 0.47μ 50V CC 0.01μ 25V Z CE 2.2μ 50V CC 2200P 50V K CMM 0.068μ 50V J	CN1 CN2 CN3 CN4 CN5 CN9 CN22 TP1,2	OB60438A OB82941A OB82942A OB81227A OB81230A OB82945A OB81238A OB82962A OB81634A 0J05326B	Tuner P.C.B. 5P Connector YEL 6P Connector YEL 3P-T Post WHT 3P-T Post YEL 2P Connector WHT 5P-T Post YEL 2P Connector BLK 2P-T Post Earth Plate (1)
	— AM —		R310 R309,356 315,316 R308,313 R307,312 353,354 R306,317 R305,361 359 324,329 R304,318 R303,325 R302 R301 FE301 L307,308 L306 L305 352,353 L301,302 VR302 VR301,303 305,306 303,304 305,352 D301,302 Q303,304 Q302,351 Q301 OB11157A OB11156A OB10127A OB10174A OB01872A	OB09686A OB09698A OB09667A OB09645A R307,312 R308,313 R309,356 R310	RK 7.5K 1/6W J RK 2.4K 1/6W J RK 390 1/6W J RK 47 1/6W J RK 330 1/6W J RK 680K 1/6W J RK 330 1/6W J	C302 C304 C313,314 C315 C319 C321 C323,327 337	OB41294A OB40420A OB41290A OB40079A OB01402A OB09372A OB09733A OB01405A	CMM 0.047μ 50V J CE 220μ 18V (LN) CMM 0.022μ 50V J CE 220μ 16V CE 4.7μ 25V CE 2.2μ 50V CE 1μ 50V	R505 R506 R507 R509 R510 R511 R512,513 515	OB09665A OB09661A OB09681A OB09674A OB09651A OB09733A OB09701A	RK 330 1/6W J RK 220 1/6W J RK 1.5K 1/6W J RK 750 1/6W J RK 82 1/6W J RK 220K 1/6W J RK 10K 1/6W J	IC651 Q651 Q652 Q653,660 661 Q654,655 656,657 658,659 D651,652 658,660 661,662 663	OB06219A OB01872A OB10062A OB10058A OB10068A OB06398A	IC μPD4081BC TR 2SC945L (P,Q) TR DTC114ES TR DTA114ES TR DTC114ES SiD 1SS176		

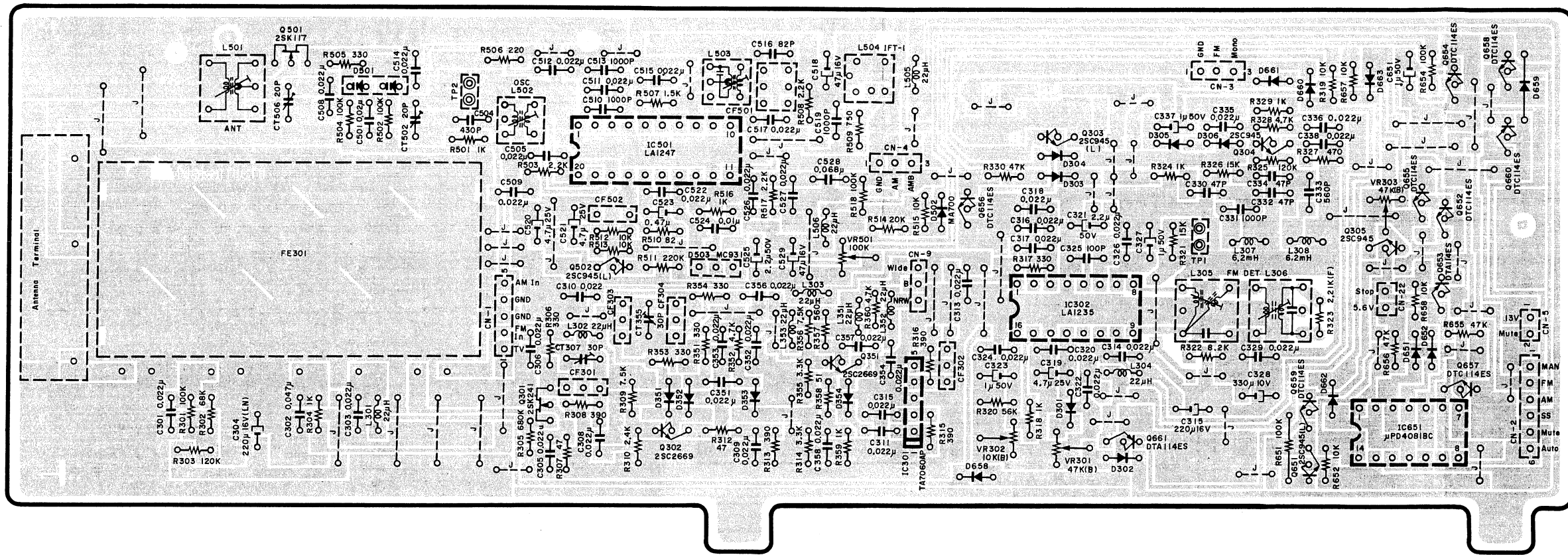


Fig. 5.18.3

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
IC301 IC302 Q301 Q302,351 Q303,304 305 D301,302 303,304 305,306 351,352 353,354 VR301,303 VR302 L301,302 303,304 351,352 353 L305 L306 L307,308 FE301 R301 R302 R303,325 R304,318 324,329 359 R305 R306,317 351,353 354 R307,312	BA06619A	Tuner P.C.B. Ass'y (SR-4 (Other))	R308,313 315,316 R309,356 R310 R314,355 R319 R320 R321,326 R322 R323 R327 R328,352 360 R330 R357 R358 CF301,302	OB09667A OB09698A OB09686A OB09689A OB09701A OB09719A OB09705A OB09699A OB25228A OB09669A OB09693A OB09717A OB09671A OB09646A OB41700A	RK 390 1/6W J RK 7.5K 1/6W J RK 2.4K 1/6W J RK 3.3K 1/6W J RK 10K 1/6W J RK 56K 1/6W J RK 15K 1/6W J RK 8.2K 1/6W J RM 2.21K 1/6W F RK 470 1/6W J RK 4.7K 1/6W J RK 47K 1/6W J RK 560 1/6W J RK 51 1/6W J Ceramic Filter SFE10.7MX2H-A Ceramic Filter SFE10.7MS3GH15A C Trimmer 30P CC 0.022μ 25V Z	C313,314 C315 C319 C321 C323,327 337 C325 C328 C330,332 334 C331 C333 CN9 IC501 Q501 Q502 D501 D502 D503 L501 L502 L503 L504 L505,506 VR501 R501,516 R502,504 518 R503,508 517 R505	OB41290A OB40079A OB01402A OB09372A OB01405A OB41071A OB40066A OB09280A OB41007A OB09379A OB81229A OB81596A — AM — OB11243A OB06129A OB01872A OB12386A OB12363A OB12420A OB51236A OB51235A OB51234A OB51233A OB51239A OB32086A OB09677A OB09725A OB09685A OB09665A	CMM 0.022μ 50V J CE 220μ 16V CE 4.7μ 25V CE 2.2μ 50V CE 1μ 50V CC 100P 50V J CE 330μ 10V CC 47P 50V J CC 1000P 25V M CC 560P 50V K 3P-T Post RED Antenna Terminal F (1) IC LA1247 FET 2SK117 (Y) TR 2SC945L (P,Q) Vari-Cap. KV1226Y SID MA700 SID MC931 Antenna Coil Osc. Coil AM IFT2 AM IFT1 Micro Coil LAL02TA220K Semi VR 100K (B) RK 1K 1/6W J RK 100K 1/6W J RK 2.2K 1/6W J RK 330 1/6W J	R506 R507 R509 R510 R511 R512,513 515 R514 CF501 CT502,506 C501,505 508,509 511,512 514,515 517,522 526 C504 C510,513 519 C516 C518,529 C520,521 C523 C524 C525 C527 C528 IC651 Q651 Q652	OB09661A OB09681A OB09674A OB09651A OB09733A OB09701A OB09708A OB41701A OB92003A OB42005A OB41787A OB41401A OB41007A OB41711A OB01403A OB01402A OB40111A OB41553A OB09372A OB09586A OB41296A — Control — OB06219A OB01872A OB10062A	RK 220 1/6W J RK 1.5K 1/6W J RK 750 1/6W J RK 82 1/6W J RK 220K 1/6W J RK 10K 1/6W J RK 20K 1/6W J Ceramic Filter SFZ450G3L Resonator 450 kHz BFU450C4N C Trimmer 20P CC 0.022μ 25V Z CP 430P 50V J CC 1000P 25V M CC 82P 50V K CE 47μ 16V CE 4.7μ 25V CE 0.47μ 50V CC 0.01μ 25V Z CE 2.2μ 50V CC 2200P 50V K CMM 0.068μ 50V J IC μPD4081BC TR 2SC945L (P,Q) TR DTC144ES	Q653,660 661 Q654,655 656,657 658,659 D651,652 658,660 661,662 663 D659 R651,654 R652,657 658 R653 R655,656 C651 CN1 CN2 CN3 CN4 CN5 CN9 CN22 TP1,2 OB60438A OB82941A OB82942A OB81227A OB81230A OB82945A OB81238A OB82962A OB81634A OJ05326B	OB10058A OB10068A OB06398A OB06181A OB01889A OB09701A OB09707A OB09717A OB01405A — Miscellaneous — OB60438A OB82941A OB82942A OB81227A OB81230A OB82945A OB81238A OB82962A OB81634A OJ05326B	TR DTA114ES TR DTC114ES SiD 1SS176 SiD 1SS53 RK 100K 1/4W J RK 10K 1/6W J RK 18K 1/6W J RK 47K 1/6W J CE 1μ 50V Tuner P.C.B. 5P Connector YEL 6P Connector YEL 3P-T Post WHT 3P-T Post YEL 2P Connector WHT 5P-T Post YEL 2P Connector BLK 2P-T Post Earth Plate (1)

5.19. Main P.C.B. Ass'y
(1) For SR-4A and SR-4 (Canada & Australia)

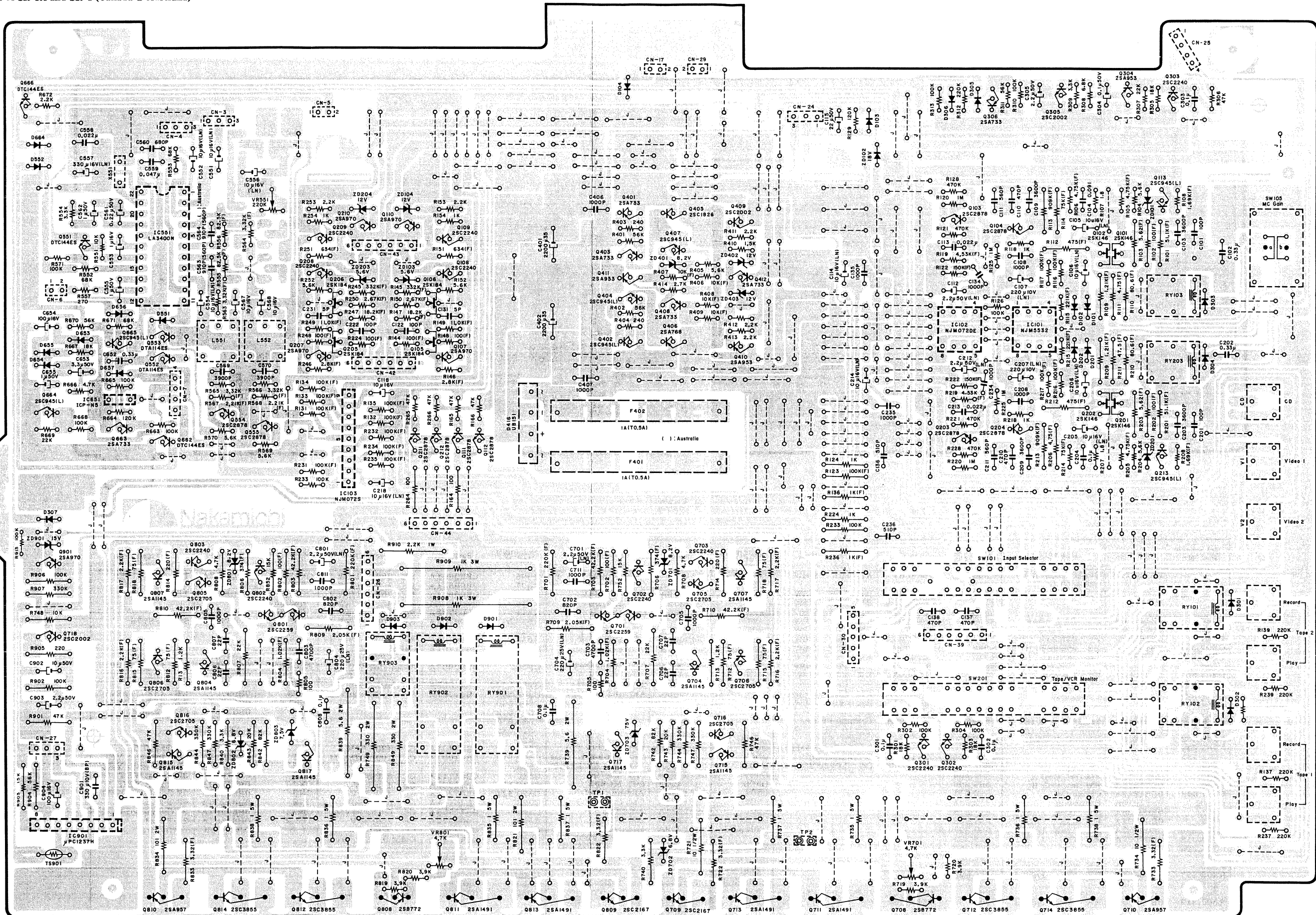


Fig. 5.19.1

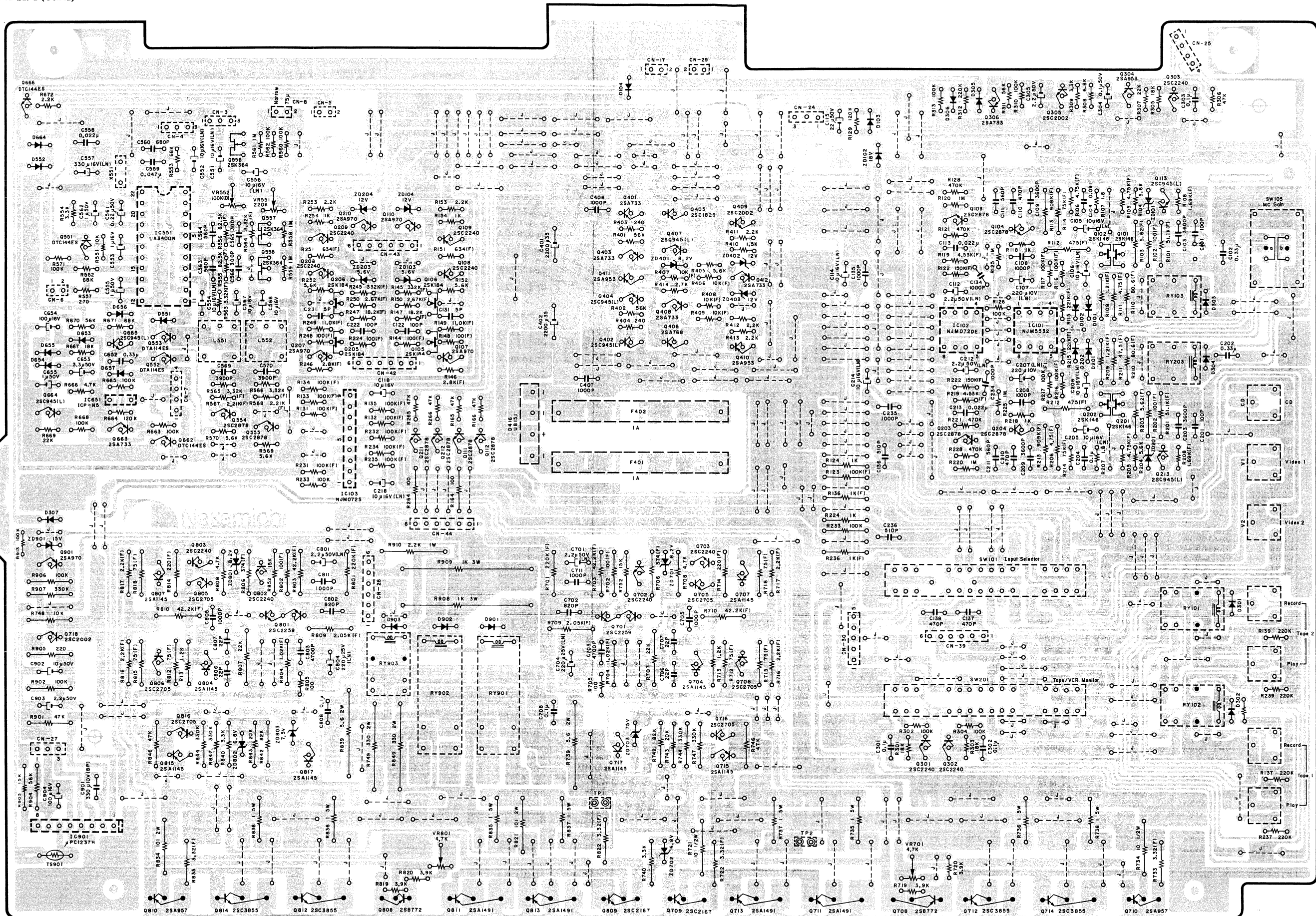


Fig. 5.19.2

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06596A	Main P.C.B. Ass'y (SR-4 (Other))	R104,204 R105,106 205,206 R107,207 R108,208 R109,209 R110,210 R111,211 R112,212 R113,213 R114,214 R115,215 R116,117 216,217 R118,218 R119,219 R120,125 220,225 R121,128 221,228 R122,222 R123,223 R124,224 R126 R129 C101,201 C102,202 C103,109 203,209 C104,204 C105,106 114,205 206,214 C107,207 C108,208 C110,210 C111,211 C112,212 C113,213 C115 C134,135 234,235 C136,236 SW105	OB09695A OB25260A OB09611A OB25217A OB22635A OB09891A OB22643A OB22576A OB09561A OB09562A OB25420A OB25387A OB09677A OB25258A OB09749A OB09741A OB25212A OB09305A OB09491A OB09725A OB09727A OB41703A OB41304A OB41238A OB09868A OB09816A OB40422A OB41225A OB41117A OB41119A OB09933A OB05582A OB40117A OB41791A OB41789A OB70078A	RK 5.6K 1/6W J RM 4.75K 1/6W F RK 1.8 1/6W J RM 1.69K 1/6W F RM 1.21K 1/4W F RM 80.6 1/4W F RM 47.5 1/4W F RM 47.5 1/4W F RM 909K 1/4W F RM 75K 1/4W F RM 221K 1/6W F RM 100K 1/6W F RK 1K 1/6W J RM 4.53K 1/6W F RK 1M 1/6W J RK 470K 1/6W J RM 1.50K 1/6W F RM 100K 1/4W F RM 1K 1/4W F RK 100K 1/6W J RK 120K 1/6W J CSP 100P 50V J CMM 0.33μ 50V J CP 3600P 100V J CMM 0.1μ 50V J CE 10μ 16V (LN) CE 220μ 10V (LN) CP 1000P 100V J CP 470P 100V G CP 560P 100V G CE 2.2μ 50V (LN) CM 0.022μ 50V J CE 22μ 50V CSP 1000P 50V J Slide Switch SSSP12	IC103 Q105,106 205,206 Q107,110 207,210 Q108,109 208,209 Q111,112 211,212 ZD103,203 ZD104,204 D104 R131-135 231-235 R136,236 R144,148 244,248 R145,245 R146,246 R147,247 R149,249 R150,250 R151,251 R152,252 R153,253 R154,254 R164,264 R165,166 265,266 C118,218 C122,222 C131,231 CN42,43	OB83007A OB83008A OB83009A OB83010A OB83002A OB81020A OB81593A OB81594A — Flat Amp. — OB11070A OB10193A OB10050A OB06142A OB06299A OB12433A OB12457A OB06398A SiD 1SS176 OB25387A OB25195A OB25099A OB25437A OB25238A OB25316A OB25295A OB25236A OB25176A OB09695A OB09685A OB09677A OB09653A OB09717A OB09816A OB41703A OB41609A OB81013A OB82971A OB10125A OB06142A OB10204A OB10205A OB12445A OB32078A OB09472A OB22567A OB22747A OB22550A OB01679A OB25486A OB24111A OB01846A OB22748A OB22632A OB05623A OB25487A OB09420A OB05675A OB24110A OB22700A OB24094A	PD Connector V130 (1) PD Connector V150 (1) PD Connector V170 (1) PD Connector V90 (2) Ribbon Cable 6P 190mm (1) 2P Pin Jack (1) 4P Pin Jack (2) 6P Pin Jack (1) — Flat Amp. — IC NJM072S FET 2SK184 (GR) TR 2SA970 (BL) TR 2SC2240 (BL) TR 2SC2878 ZD 5.6V UTZJ5.6B ZD 12V UTZJ12B SiD 1SS176 RM 100K 1/6W F (10) RM 100 1/6W F RM 332K 1/6W F RM 2.80K 1/6W F RM 18.2K 1/6W F RM 11.0K 1/6W F RM 2.67K 1/6W F RM 634 1/6W F RK 5.6K 1/6W J RK 2.2K 1/6W J RK 1K 1/6W J RK 100 1/6W J RK 47K 1/6W J CE 10μ 16V (LN) CSP 100P 50V J CMM 5P 50V Z Dip Mate 6P WH6D-1 Ribbon Cable 6P 230mm (1) — Power Amp. — TR 2SC2259 TR 2SC2240 (BL) TR 2SA1145 (O,Y) TR 2SC2705 (O,T) ZD 8.2V UTZJ8.2B Semi VR 4.7K (B) RM 220K 1/4W F RM 100 1/4W F RM 42.2K 1/4W F RM 1.02K 1/4W F RK 100 1/4W J RM 374 1/4W F RF 22K 1/2W J RK 4.7K 1/4W J RM 2.05K 1/4W F RM 75 1/4W F RK 1.2K 1/4W J RM 220 1/2W F RM 2.2K 1/4W F RK 3.9K 1/4W J RF 10 1/2W J RM 3.32 1/4W F RC 1 5W K (8)	R739,839 R749,849 R752,852 C701,801 C702,802 C703,803 C704,804 C705,805 C706,707 806,807 C708,808 C711,811 TP1,2 CN44 IC901 Q715,717 815,817 Q716,816 Q718 Q901 D307,901 902,903 ZD702,802 ZD703,803 ZD901 RY901,902 RY903 R740,840 R742,842 R743,843 R744,747 844,847 907 R746,846 901 R748 R902,906 R903 R904 R905 R908,909 R910 R913 C901 C902 C903 C904 CN26 CN27 Q401,403 408,412 Q402,404 407 Q405 Q406 Q409 Q410,411 ZD401 ZD402,403 D416 R401,402 R403,404 R405 R406,407 408,409 R410 R411,412 413 R414 C401,402	OB24137A OB24138A OB01683A OB09933A OB41223A OB41282A OB40421A OB41225A OB41702A OB41594A OB41791A OB81634A OB81013A OB82980A OB82981A OB82982A OB83007A — Protector — OB11246A OB10204A OB10205A OB06322A OB10050A OB06398A OB12439A OB12442A OB12463A OB90199A OB90243A OB01681A OB05668A OB09509A OB05627A OB05641A OB01888A OB01889A OB01683A OB05508A OB01933A OB24136A OB24139A OB09725A OB40408A OB40116A OB09372A OB01400A OB81239A OB81229A — Regulator — OB06013A OB01872A OB10210A OB10209A OB06322A OB06372A OB12445A OB12457A OB12418A OB09719A OB09662A OB09695A OB25291A OB09681A OB09685A OB09687A OB40428A	RF 5.6 2W RF 330 2W RK 15K 1/4W J CE 2.2μ 50V (LN) CP 820P 100V J CMM 4700P 50V J CE 220μ 25V (LN) CP 1000P 100V J CSP 22P 50V J CM 0.1μ 100V J CSP 1000P 50V J 2P-T Post Dip Mate 6P WH6D-1 PD Connector V440 RED (1) PD Connector V440 WHT (2) PD Connector V440 YEL (1) PD Connector V130 (2) — Protector — IC μPC1237H TR 2SA1145 (O,Y) Pair TR 2SC2705 (O,T) Pair TR 2SC2002 (K,L) TR 2SA970 (BL) SiD 1SS176 ZD 6.8V UTZJ6.8B ZD 7.5V UTZJ7.5B ZD 15V UTZJ15B Relay 24V AJR32327 Relay 24V G5A237P RK 3.3K 1/4W J RK 82K 1/4W J RK 20K 1/4W J RK 330K 1/4W J RK 47K 1/4W J RK 10K 1/4W J RK 100K 1/4W J RK 15K 1/4W J RK 56K 1/4W J RK 220 1/4W J RF 1K 3W RF 2.2K 1W RK 100K 1/6W J CE 330μ 10V (BP) CE 10μ 50V CE 2.2μ 50V CE 100μ 16V 6P-T Post WHT 3P-T Post RED TR 2SA733 (P,Q) TR 2SC945L (P,Q) TR 2SC1826 (O,Y) TR 2SA768 (O,Y) TR 2SC2002 (K,L) TR 2SA953 (K,L) ZD 8.2V UTZJ8.2B ZD 12V UTZJ12B SiD UB-151 RK 56K 1/6W J RK 240 1/6W J RK 5.6K 1/6W J RM 10.0K 1/6W F RK 1.5K 1/6W J RK 2.2K 1/6W J RK 2.7K 1/6W J CE 2200μ 35V (LN)	C406,407 CN29 F401,402	OB41791A OB81225A OB08374A	CSP 1000P 50V J 2P-T Post RED Fuse 1A
IC551 IC651 Q551,662 666 Q552,553 Q554,555 Q556,557 558 Q663 Q664,665 D551,552 650,653 654,655 656,657 664 L551,552 VR551 VR552 X551 R551 R552,553 671 R554 R555,556 R557 R558,559 561 R560,562 571,663 665,668 R563,564 565,566 R567,568 R569,570 R664 R666 R667 R669 R670 R672 C551,552 554,556 C553,555 562,655 C557 C558 C559 C560 C561 C563,564 C565,566 C567,568 C569,570 C652 C653 C654 CN3 CN4 CN5 CN6 CN7 CN8 IC101 IC102 Q101,102 201,202 Q103,104 203,204 Q113,213 D101,102 103,201 202 ZD101,201 ZD102 RY103,203 R101,201 R102,202 R103,203	— MPX — OB11245A OB11248A OB10062A OB10058A OB06299A OB10151A OB06013A OB01872A OB06398A OB51237A OB32066A OB32086A OB90172A OB09701A OB09721A OB09689A OB25379A OB09663A OB09749A OB09725A OB25245A OB25228A OB09695A OB09727A OB09693A OB09707A OB09709A OB09719A OB09685A OB09816A OB01405A OB40418A OB41290A OB41555A OB09287A OB40023A OB41404A OB41397A OB01412A OB41281A OB41304A OB01863A OB01400A OB82943A OB82944A OB81223A OB82946A OB81231A OB81226A — Eq. Amp. — OB11204A OB11005A OB10195A OB06299A OB01872A OB06398A OB12451A OB12469A OB90243A OB09453A OB22567A OB22684A	IC LA3400N IC ICP-N5-T104 TR DTC144ES TR DTA114ES TR 2SC2878 FET 2SK364 TR 2SA733 (P,Q) TR 2SC945L (P,Q) SiD 1SS176 MPX Filter TF-1042B-1013-00 Semi VR 220K (B) Semi VR 100K (B) Ceramic Filter CSB456F11 RK 10K 1/6W J RK 68K 1/6W J RK 3.3K 1/6W J RM 82.5K 1/6W F RK 270 1/6W J RK 1M 1/6W J RK 100K 1/6W J RM 3.32K 1/6W F RM 2.21K 1/6W F RK 5.6K 1/6W J RK 120K 1/6W J RK 4.7K 1/6W J RK 18K 1/6W J RK 22K 1/6W J RK 56K 1/6W J RK 2.2K 1/6W J CE 10μ 16V (LN) CE 1μ 50V CE 330μ 16V (LN) CMM 0.022μ 50V J CC 0.047μ 25V Z CC 680P 50V K CE 0.22μ 50V CP 560P 50V J CP 300P 50V J CE 10μ 16V CMM 3900P 50V J CMM 0.33μ 50V J CE 3.3μ 50V CE 100μ 16V 3P Connector WHT 3P Connector YEL 2P-T Post WHT 2P Connector YEL 4P-T Post WHT 2P-T Post YEL IC NJM5532DD IC NJM072DE FET 2SK146 (BL,V) TR 2SC2878 TR 2SC945L (P,Q) SiD 1SS176 ZD 10V UTZJ10B ZD 18V UTZJ18B Relay G5A237P RM 51.1K 1/4W F RM 100 1/4W F RM 5.62 1/4W F	R104,204 R105,106 205,206 R107,207 R108,208 R109,209 R110,210 R111,211 R112,212 R113,213 R114,214 R115,215 R116,117 216,217 R118,218 R119,219 R120,125 220,225 R121,128 221,228 R122,222 R123,223 R124,224 R126 R129 C101,201 C102,202 C103,109 203,209 C104,204 C105,106 114,205 206,214 C107,207 C108,208 C110,210 C111,211 C112,212 C113,213 C115 C134,135 234,235 C136,236 SW105 Q301,302 303 Q304 Q305 Q306 D301-306 RY101,102 R137,139 237,239 312 R301,303 305 R302,304 310,313 R306 R307 R308 R309 R311 C137,138 C301,302 303 C304 C305 SW101 SW201 CN17 CN24 CN25 CN30 CN39	OB09695A OB25260A OB09611A OB25217A OB22635A OB09891A OB22643A OB22576A OB09561A OB09562A OB25420A OB25387A OB09677A OB25258A OB09749A OB09741A OB25212A OB09305A OB09491A OB09725A OB09727A OB41703A OB41304A OB41238A OB09868A OB09816A OB40422A OB41225A OB41117A OB41119A OB09933A OB05582A OB40117A OB41791A OB41789A OB70078A OB06142A OB06372A OB06322A OB06013A OB06398A OB90243A OB09733A OB09707A OB09725A OB09717A OB09709A OB09697A OB09689A OB09719A OB41217A OB41298A OB40265A OB40027A OB70100A OB70103A OB82957A OB81229A OB81231A OB82968A OB81013A OB82750A OB82751A OB82752A OB82992A	RK 5.6K 1/6W J RM 4.75K 1/6W F RK 1.8 1/6W J RM 1.69K 1/6W F RM 1.21K 1/4W F RM 80.6 1/4W F RM 47.5 1/4W F RM 47.5 1/4W F RM 909K 1/4W F RM 75K 1/4W F RM 221K 1/6W F RM 100K 1/6W F RK 1K 1/6W J RM 4.53K 1/6W F RK 1M 1/6W J RK 470K 1/6W J RM 1.50K 1/6W F RM 100K 1/4W F RM 1K 1/4W F RK 100K 1/6W J RK 120K 1/6W J CSP 100P 50V J CMM 0.33μ 50V J CP 3600P 100V J CMM 0.1μ 50V J CE 10μ 16V (LN) CE 220μ 10V (LN) CP 1000P 100V J CP 470P 100V G CP 560P 100V G CE 2.2μ 50V (LN) CM 0.022μ 50V J CE 22μ 50V CSP 1000P 50V J Slide Switch SSSP12 TR 2SC2240 (BL) TR 2SA953 (K,L) TR 2SC2002 (K,L) TR 2SA733 (P,Q) SiD 1SS176 (6) Relay 24V G5A237P RK 220K 1/6W J RK 18K 1/6W J RK 100K 1/6W J RK 47K 1/6W J RK 22K 1/6W J RK 6.8K 1/6W J RK 3.3K 1/6W J RK 56K 1/6W J CP 470P 100V J CMM 0.1μ 50V J CE 0.1μ 50V CE 2.2μ 50V Slide Switch ESA26132 Slide Switch ESA26572 2P Connector WHT 3P-T Post RED 4P-T Post WHT 5P Connector WHT Dip Mate 6P WH6D-1 PD Connector V80 (1) PD Connector V80 (3) PD Connector V80 (1) PD Connector V150 WHT (2)	IC103 Q105,106 205,206 Q107,110 207,210 Q108,109 208,209 Q111,112 211,212 ZD103,203 ZD104,204 D104 R131-135 231-235 R136,236 R144,148 244,248 R145,245 R146,246 R147,247 R149,249 R150,250 R151,251 R152,252 R153,253 R154,254 R164,264 R165,166 265,266 C118,218 C122,222 C131,231 CN42,43 Q701,801 Q702,703 802,803 Q704,707 804,807 Q705,706 805,806 ZD701,801 VR701,801 R702,802 R703,710 803,810 R704,804 R705,805 R706,806 R707,807 R708,808 R709,809 R712,715 718,812 815,818 R713,813 R714,814 R716,717 816,817 R719,720 819,820 R721,734 821,834 R722,733 822,833 R735-738 835-838	OB83007A OB83008A OB83009A OB83010A OB83002A OB81020A OB81593A OB81594A — Flat Amp. — OB11070A OB10193A OB10050A OB06142A OB06299A OB12433A OB12457A OB06398A SiD 1SS176 OB25387A OB25195A OB25099A OB25437A OB25238A OB25316A OB25295A OB25236A OB25176A OB09695A OB09685A OB09677A OB09653A OB09717A OB09816A OB41703A OB41609A OB81013A OB82971A OB10125A OB06142A OB10204A OB10205A OB12445A OB32078A OB09472A OB22567A OB22747A OB22550A OB01679A OB25486A OB24111A OB01846A OB22748A OB2							

6. SCHEMATIC DIAGRAMS

6.1. IC Block Diagrams

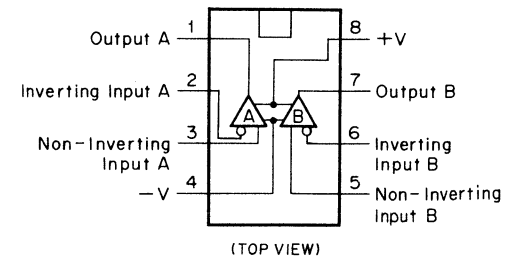


Fig. 6.1.1 Operational Amp. IC NJM072DE, NJM5532DD

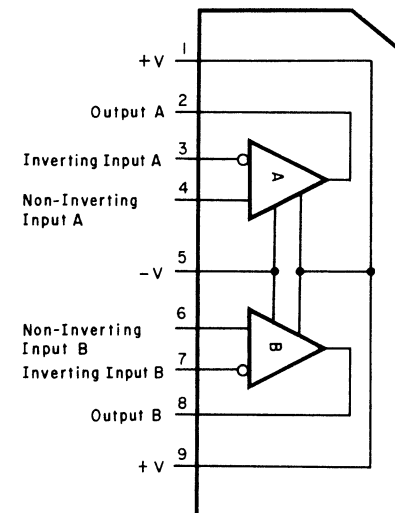


Fig. 6.1.2 Operational Amp. IC NJM072S

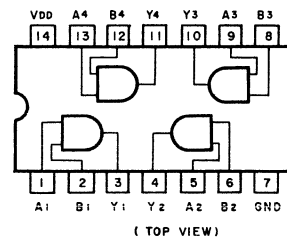


Fig. 6.1.3 AND Gate C-MOS IC μPD4081BC

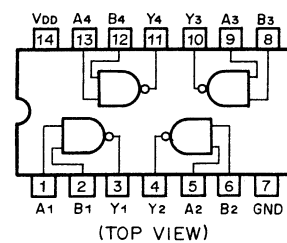


Fig. 6.1.4 NAND Gate C-MOS IC μPD4011BC

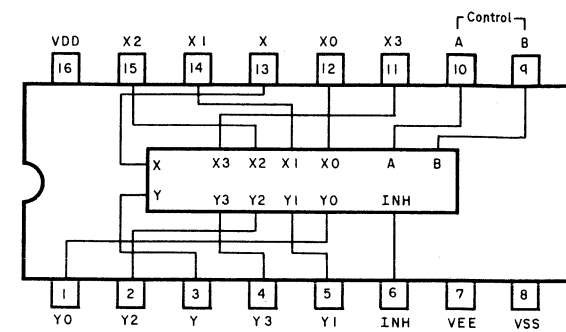


Fig. 6.1.5 Analog Multiplexers/Demultiplexers IC μPD4052BC

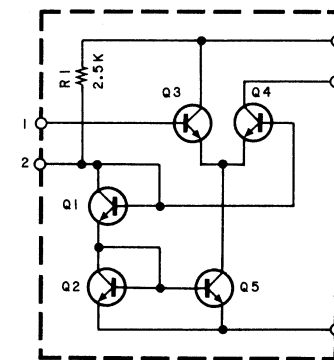


Fig. 6.1.6 FM IF Amp. IC TA7060AP

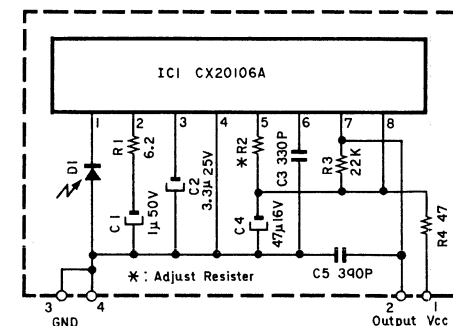


Fig. 6.1.7 Remote Control Receiver IC BX-1419

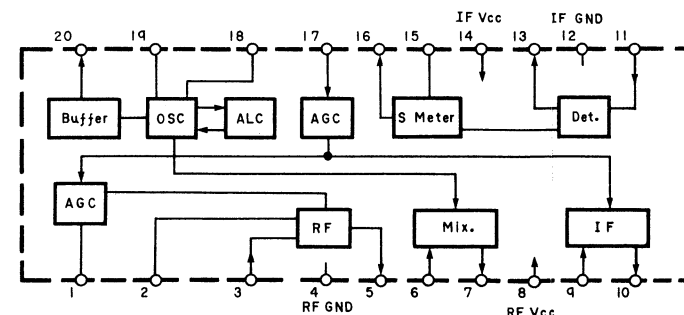


Fig. 6.1.8 AM Tuner IC LA1247

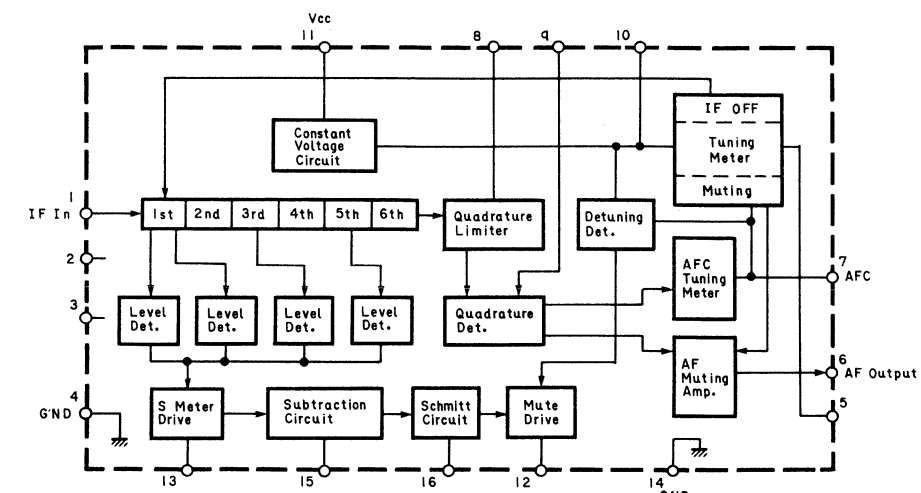


Fig. 6.1.9 FM IF System IC LA1235

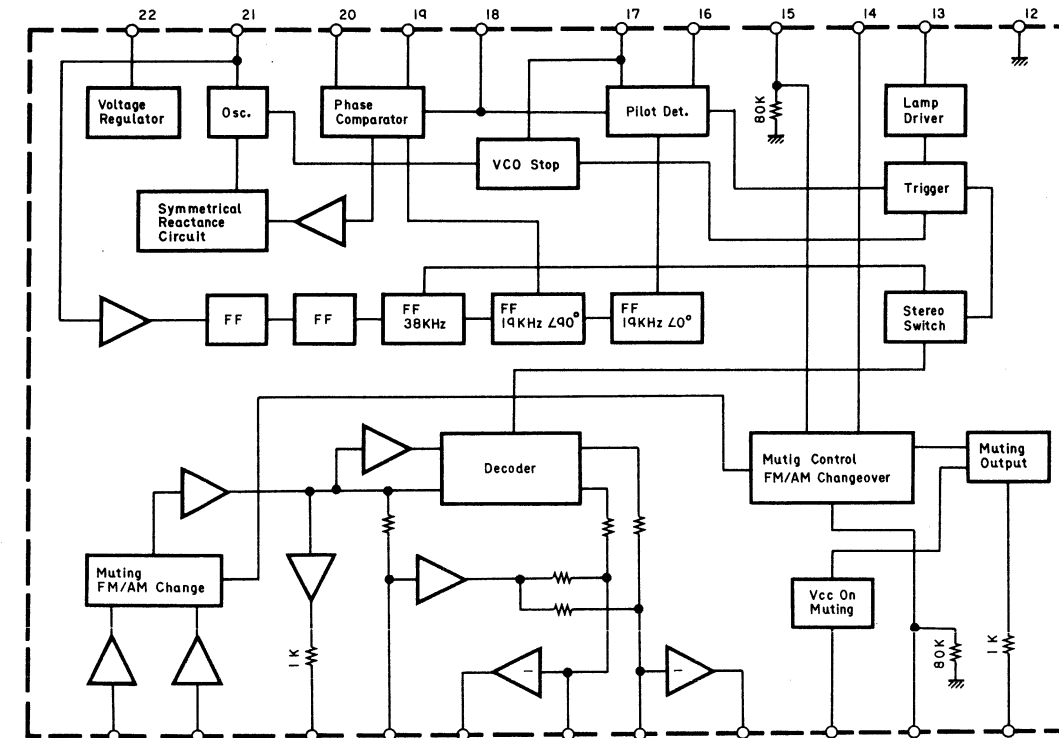


Fig. 6.1.10 FM Stereo Demodulator IC LA3400N

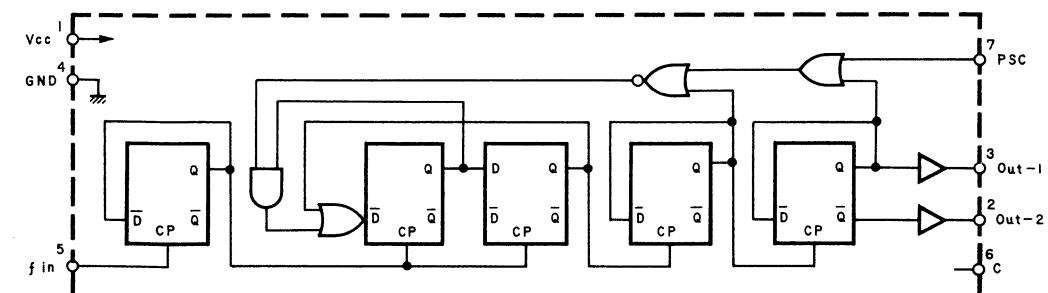
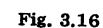
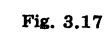
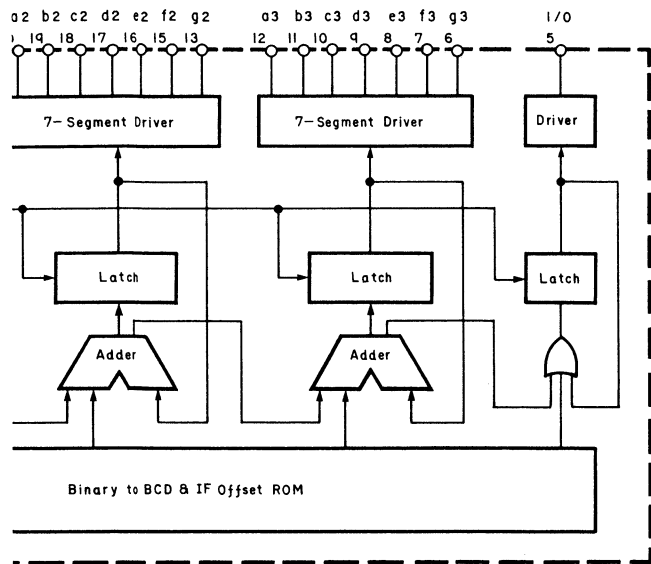


Fig. 6.1.11 ECL Prescaler (FM) IC TD6104

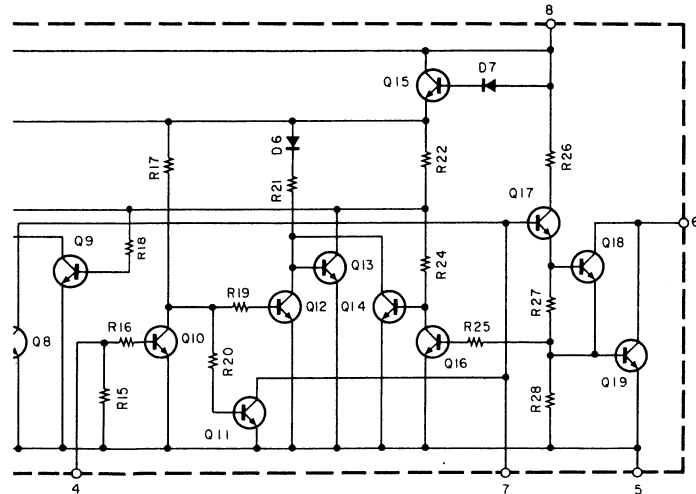


Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
IC301 IC302 Q301 Q302,351 Q303,304 305,352 D301,302 303,304 305,306 VR 301,303 VR 302 L301,302 303,304 352,353 L305 L306 L307,308 L351 FE301 R301 R302 R303,325 R304,318 324,329 359 R305,361 R306,317 353,354 R307,312 R308,313 315,316 R309,356 R310 R319 R320 R321,326 R322 R323	BA06846A	Tuner P.C.B. Ass'y	R327	OB09669A	RK 470 1/6W J	IC501 Q501 Q502 D501 D502 D503 L501 L502 L503 L504 L505,506 VR501 R501,516 R502,504 518 R503,508 517 R505 R506 R507 R509 R510 R511 R512,513 515 R514 CF501 CF502 CT502,506 C501,505 508,509 511,512 514,515 517,522 526 C504 C510,513 519	— AM —		C516	OB41711A	CC 82P 50V K
	— FM —		R328	OB09693A	RK 4.7K 1/6W J		IC LA1247	C518,529	OB01403A	CE 47μ 16V	
	OB11156A	IC TA7060AP	R330	OB09717A	RK 47K 1/6W J		FET 2SK117 (Y)	C520,521	OB01402A	CE 4.7μ 25V	
	OB11157A	IC LA1235	R355	OB09689A	RK 3.3K 1/6W J		TR 2SC945L (P,Q)	C523	OB40111A	CE 0.47μ 50V	
	OB10127A	FET 2SK241 (GR)	R357	OB09671A	RK 560 1/6W J		Var-Cap. KV1226Y	C524	OB41553A	CC 0.01μ 25V Z	
	OB10174A	TR 2SC2669 (O,Y)	R358	OB09646A	RK 51 1/6W J		SiD MA700	C525	OB09372A	CE 2.2μ 50V	
	OB01872A	TR 2SC945L (P,Q)	R362	OB09694A	RK 5.1K 1/6W J		SiD MC931	C527	OB09586A	CC 2200P 50V K	
			R363	OB09687A	RK 2.7K 1/6W J		Antenna Coil	C528	OB41296A	CMM 0.068μ 50V J	
	OB06398A	SiD 1SS176	CF301,302	OB41818A	Ceramic Filter		Osc. Coil		— Control —		
			CF303,304	OB41746A	SFE10.7MX22K-A		AM IFT2				
					Ceramic Filter		AM IFT1	IC651	OB06219A	IC μPD4081BC	
	OB32084A	Semi VR 47K (B)	CT307,355	OB41614A	SFE10.7MS3GH15A		Micro Coil	Q651	OB01872A	TR 2SC945L (P,Q)	
	OB32080A	Semi VR 10K (B)	C301,303	OB41787A	C Trimmer 30P		LAL02TA220K	Q652	OB10062A	TR DTC144ES	
	OB51239A	Micro Coil 22μH	305,306		CC 0.022μ 25V Z		Semi VR 100K (B)	Q653,660	OB10058A	TR DTA114ES	
			308,309				RK 1K 1/6W J	661			
	OB51240A	FM Det. Coil A	310,311				RK 100K 1/6W J	Q654,655	OB10068A	TR DTC114ES	
	OB51241A	FM Det. Coil B	312,316					656,657			
	OB51243A	Choke Coil	317,318				OB09685A	658,659			
	OB51238A	Anti-birdy Filter	324,326				RK 2.2K 1/6W J	D651,652	OB06398A	SiD 1SS176	
	OB91017A	Front-end	329,335					658,660			
		FE407-G25	336,338				RK 330 1/6W J	661,662			
			353,354				RK 220 1/6W J	663			
			356,358				RK 1.5K 1/6W J	D659	OB06181A	SiD 1SS53	
			620,622				RK 750 1/6W J	R651,654	OB01889A	RK 100K 1/4W J	
	OB09725A	RK 100K 1/6W J	C302	OB41294A	CMM 0.047μ 50V J		RK 82 1/6W J	R652,657	OB09701A	RK 10K 1/6W J	
OB09721A	RK 68K 1/6W J	C304	OB40420A	CE 220μ 16V (LN)	RK 220K 1/6W J	658					
OB09727A	RK 120K 1/6W J	C313,314	OB41290A	CM 0.022μ 50V J	RK 10K 1/6W J	R653	OB09707A	RK 18K 1/6W J			
OB09677A	RK 1K 1/6W J	C315	OB40079A	CE 220μ 16V		R655,656	OB09717A	RK 47K 1/6W J			
		C319	OB01402A	CE 4.7μ 25V		C651	OB01405A	CE 1μ 50V			
OB09745A	RK 680K 1/6W J	C321	OB09372A	CE 2.2μ 50V	RK 20K 1/6W J						
OB09665A	RK 330 1/6W J	C323,327	OB01405A	CE 1μ 50V	Ceramic Filter		— Miscellaneous —				
		337			SFZ450C3L						
OB09645A	RK 47 1/6W J	C325	OB41071A	CC 100P 50V J	Resonator 450 kHz	OB42005A	OB60438A	Tuner P.C.B.			
OB09667A	RK 390 1/6W J	C328	OB40066A	CE 330μ 10V	BFU450C4N	OB41787A	OB83078A	5P Connector			
		C330,332	OB09280A	CC 47P 50V J	C Trimmer 20P		OB82942A	6P Connector YEL			
OB09698A	RK 7.5K 1/6W J	334			CC 0.022μ 25V Z		OB81227A	3P-T Post WHT			
OB09686A	RK 2.4K 1/6W J	C331	OB41007A	CC 1000P 25V M			OB81230A	3P-T Post YEL			
OB09701A	RK 10K 1/6W J	C333	OB09379A	CC 560P 50V K			OB82945A	2P Connector WHT			
OB09719A	RK 56K 1/6W J	C359	OB09816A	CE 10μ 16V (LN)			OB82962A	2P Connector BLK			
OB09705A	RK 15K 1/6W J	C360	OB41404A	CP 560P 50V J		OB41401A	OB81634A	2P-T Post			
OB09699A	RK 8.2K 1/6W J		OB90078A	Antenna Terminal		OB41007A	OJ05326B	Earth Plate			
OB25228A	RM 2.21K 1/6W F			(1)				(1)			

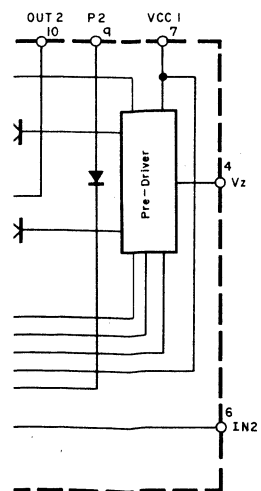




7-Segment Driver IC TD6301A



Remote Control IC LB1645N



p./Speaker Protector IC μPC1237H

INPUT	IN1	IN2	OUTPUT	OUT1	OUT2	OPERATION
0	0	0	0	0		Braking
1	0	1	1	0		Forward (Reverse)
0	1	0	1	1		Reverse (Forward)
1	1	0	0	0		Braking

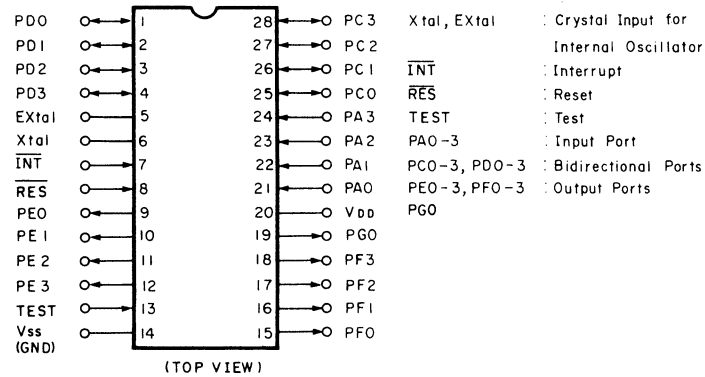
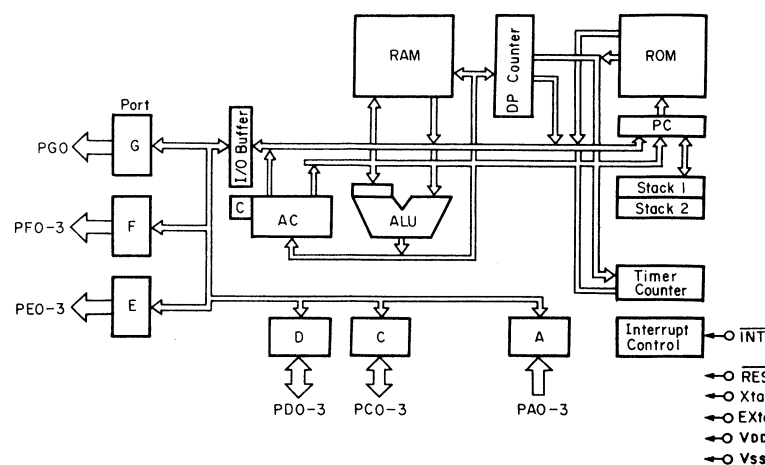
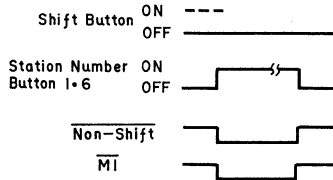
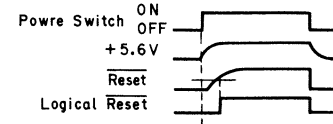


Fig. 6 1.17 Microprocessor LB6416E

Function of Micro-processor LB6416E

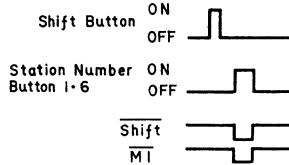
Pin No.	Signal Name	In/Out	Description
1	Power-ON	Out	Power-ON becomes "L" when Reset becomes "H" (reset is released), after the Power switch is turned ON. Power-ON = "L" signal causes relays RY401 and RY402 on the Power Supply P.C.B. Ass'y to turn ON, as a result power is supplied to respective circuits. Power ON/OFF control is possible through the Remote Control Unit. Pressing of the Power ON/OFF button on the Remote Control Unit causes the state of Power-ON to be changed, which enables turning ON and OFF of the power to the circuits. (Active "L")
2	Seek-up	Out	Becomes "L" upon push of the Seek Up/Down button on the Remote Control Unit. (Active "L")
3	Seek-down	Out	Becomes "L" upon push of the Station Number button 1-6 on the Remote Control Unit. Refer to Shift (pin No. 11) and Non-shift (pin No. 12). (Active "L")
4	M1	Out	Becomes "L" upon push of the Station Number button 1-6 on the Remote Control Unit. Refer to Shift (pin No. 11) and Non-shift (pin No. 12). (Active "L")
5	EX	—	Resonator (800 kHz) is connected.
6	X	—	—
7	INT	In	Not used. Connected to +5 V.

Pin No.	Signal Name	In/Out	Description
8	Reset	In	When the Power switch is turned ON or OFF, Reset becomes "L" and this IC is reset. (Active "L")
9	AM	Out	Becomes "L" upon push of the AM/FM button on the Remote Control Unit. (Active "L")
10	FM	Out	Becomes "L" upon push of the AM/FM button on the Remote Control Unit. (Active "L")
11	Shift	Out	When the Station Number button 1-6, 2-7, 3-8, 4-9, or 5-10 on the Remote Control Unit is pressed without pushing the Shift button on the Remote Control Unit, Non-shift and M1, M2, M3, M4, or M5 become "L" simultaneously and station 1, 2, 3, 4, or 5 (not 6, 7, 8, 9, or 10) is selected.
12	Non-shift	Out	When the Station Number button 1-6, 2-7, 3-8, 4-9, or 5-10 on the Remote Control Unit is pressed without pushing the Shift button on the Remote Control Unit, Non-shift and M1, M2, M3, M4, or M5 become "L" simultaneously and station 1, 2, 3, 4, or 5 (not 6, 7, 8, 9, or 10) is selected.



(Station Number 1 select timing chart)

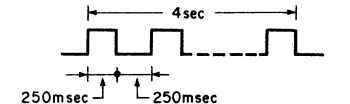
When one of the Station Number buttons is pressed within 2 seconds after the Shift button is pressed, Shift and one of M1 through M5 become "L" simultaneously and one of stations 6 through 10 is selected.



(Station Number 6 select timing chart)

13	TEST	In	Not used.
14	Vss	In	Connected to GND.
15	M2	Out	M2, M3, M4 and M5 become "L" when Station Number buttons 2-7, 3-8, 4-9 and 5-10 on the Remote Control Unit are pressed. Refer to Shift (pin 11) and Non-shift (pin 12). (Active "L")
16	M3	Out	M2, M3, M4 and M5 become "L" when Station Number buttons 2-7, 3-8, 4-9 and 5-10 on the Remote Control Unit are pressed. Refer to Shift (pin 11) and Non-shift (pin 12). (Active "L")
17	M4	Out	M2, M3, M4 and M5 become "L" when Station Number buttons 2-7, 3-8, 4-9 and 5-10 on the Remote Control Unit are pressed. Refer to Shift (pin 11) and Non-shift (pin 12). (Active "L")
18	M5	Out	M2, M3, M4 and M5 become "L" when Station Number buttons 2-7, 3-8, 4-9 and 5-10 on the Remote Control Unit are pressed. Refer to Shift (pin 11) and Non-shift (pin 12). (Active "L")
19	Remote	Out	Becomes L while receiving a signal from the Remote Control Unit. When Remote is "L", the indicator on the Remote Control Sensor lights up. (Active "L")
20	VDD	In	Supplied with +5 V.
21	Sin	In	Receives the output signal from IC954 (Remote Control Receiver) on the Display P.C.B. Ass'y. (Active "L")

Pin No.	Signal Name	In/Out	Description
22	P.Mute	In	Power Mute signal generated at power ON and OFF. (Active "H")
23	K.Mute	In	Becomes "L" upon push of the Audio Mute switch. (Active "L") At the falling edge of K.Mute, a 3-msec width pulse is output from M.PLS (pin 25) to the Audio Mute flip-flop consisting of IC605. The pulse input inverts state of the flip-flop. When the Audio Mute flip-flop is set, audio muting is enabled and Audio Mute indicator lights up.
24	S.Mute	In	If the Volume Up button on the Remote Control Unit is pressed (Vol-up (pin 27) = "L") while S.Mute is at "H", i.e. while the Audio Mute flip-flop consisting of IC605 is being set and audio mute is enabled, a 3-msec width pulse is output from M.PLS (pin 25) to reset the Audio Mute flip-flop and to disable audio mute.
25	M.PLS	Out	Outputs a 3-msec width pulse which inverts state of the Audio Mute flip-flop consisting of IC605. Pulse is output in the following cases. (Active "L") 1. When the Audio Mute switch is pressed. (Refer to K.Mute (pin 23).) 2. When the Volume Up button on the Remote Control Unit is pressed while audio muting is being enabled. (Refer to S.Mute (pin 24).)
26	P.IND	Out	Outputs pulse train for 4 seconds in the following cases. The green Power indicator flashes. (Active "H") 1. When reset is released (Reset = "H") after the Power switch is turned ON. 2. When power is turned ON by pressing of the Power ON/OFF button on the Remote Control Unit.
27	Vol-up	Out	Becomes "L" while the Volume Up/Down button on the Remote Control Unit is being pressed. (Active "L")
28	Vol-down	Out	Becomes "L" while the Volume Up/Down button on the Remote Control Unit is being pressed. (Active "L")



6.2. Schematic Diagrams

6.2.1. Amplifier Section

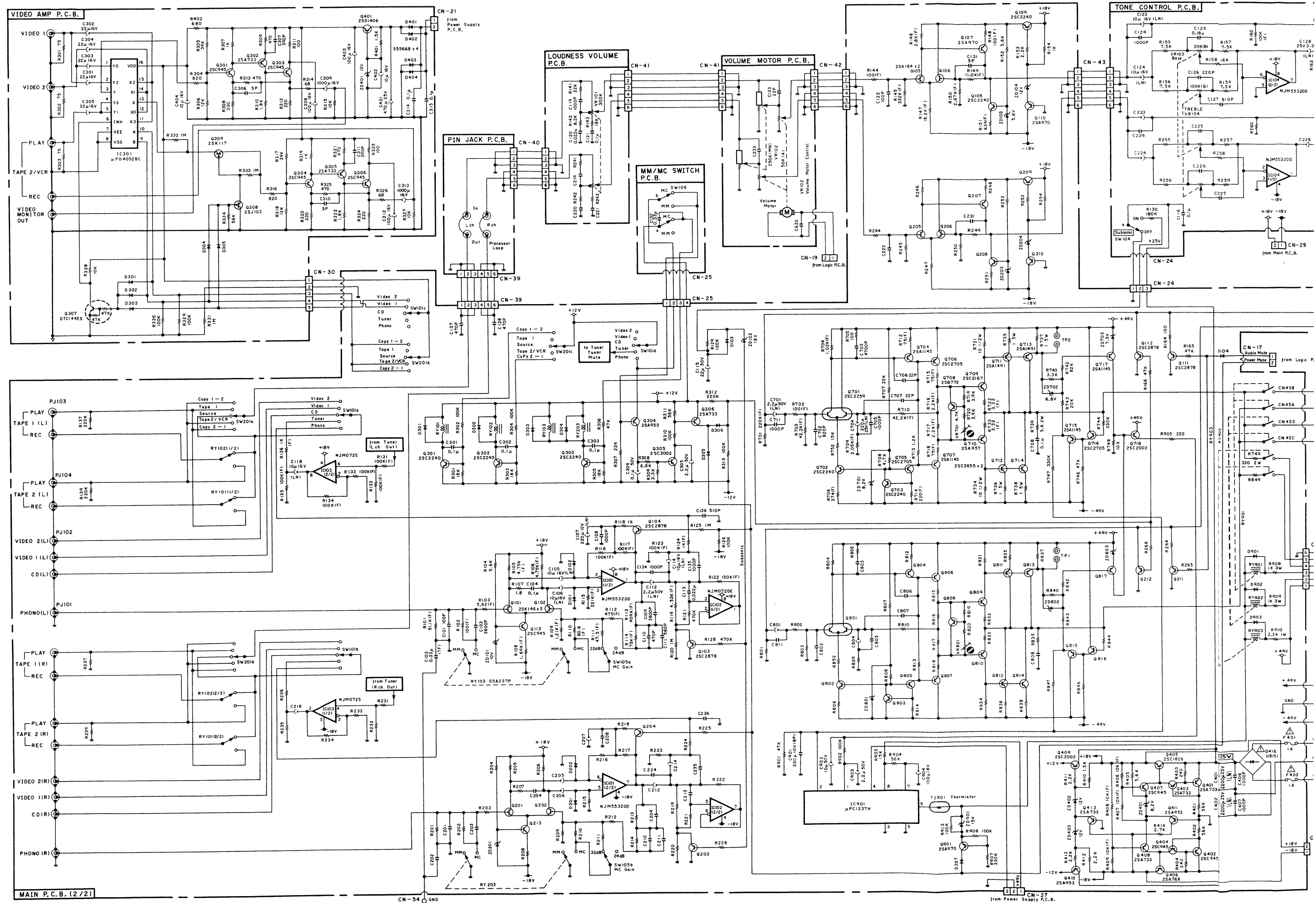
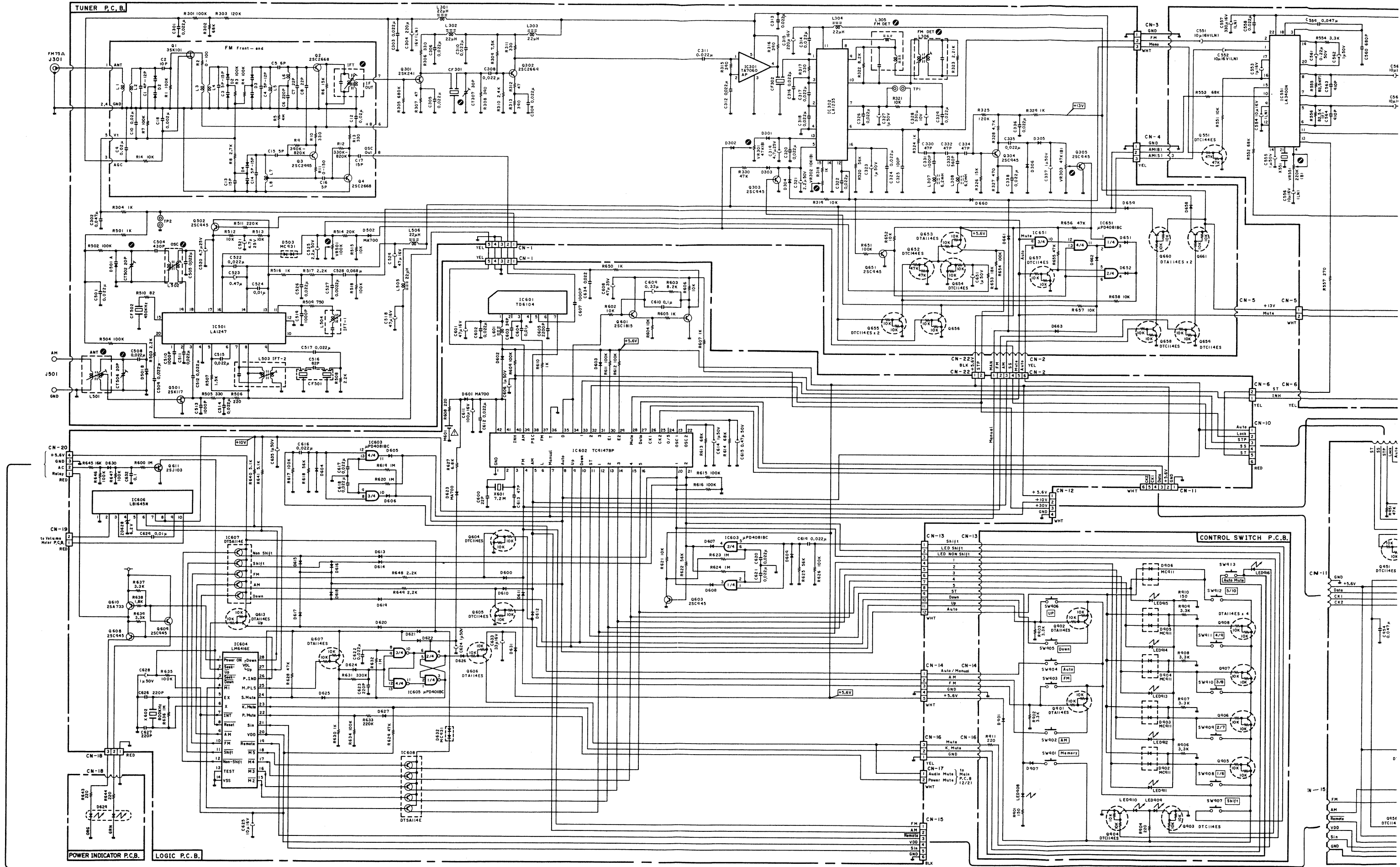


Fig. 6.2.1

6.2.2. Tuner and Power Supply Section
(1) For SR-4A and SR-4 (Canada)



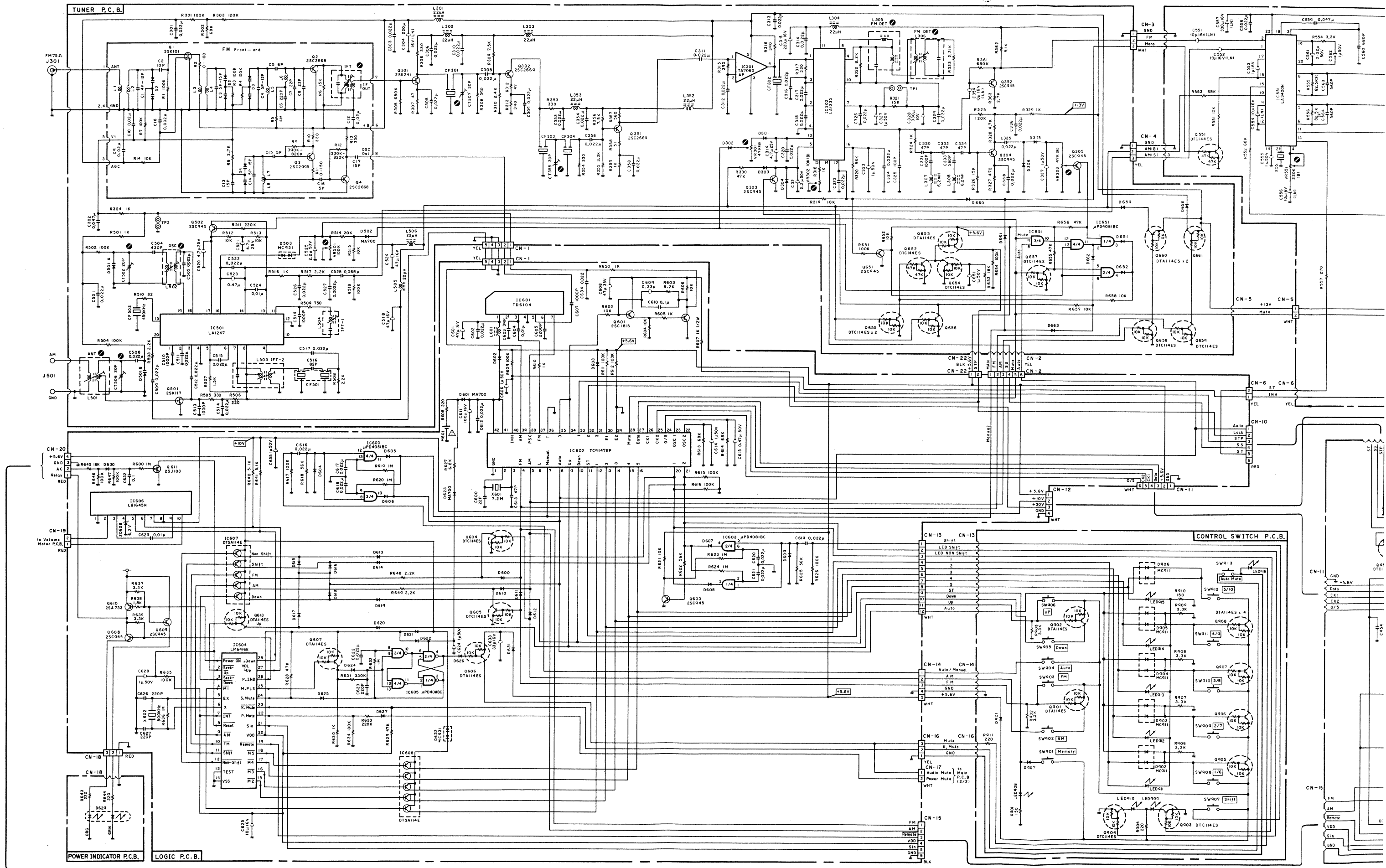


Fig. 6.2.2.2 For SR-4 (Australia)

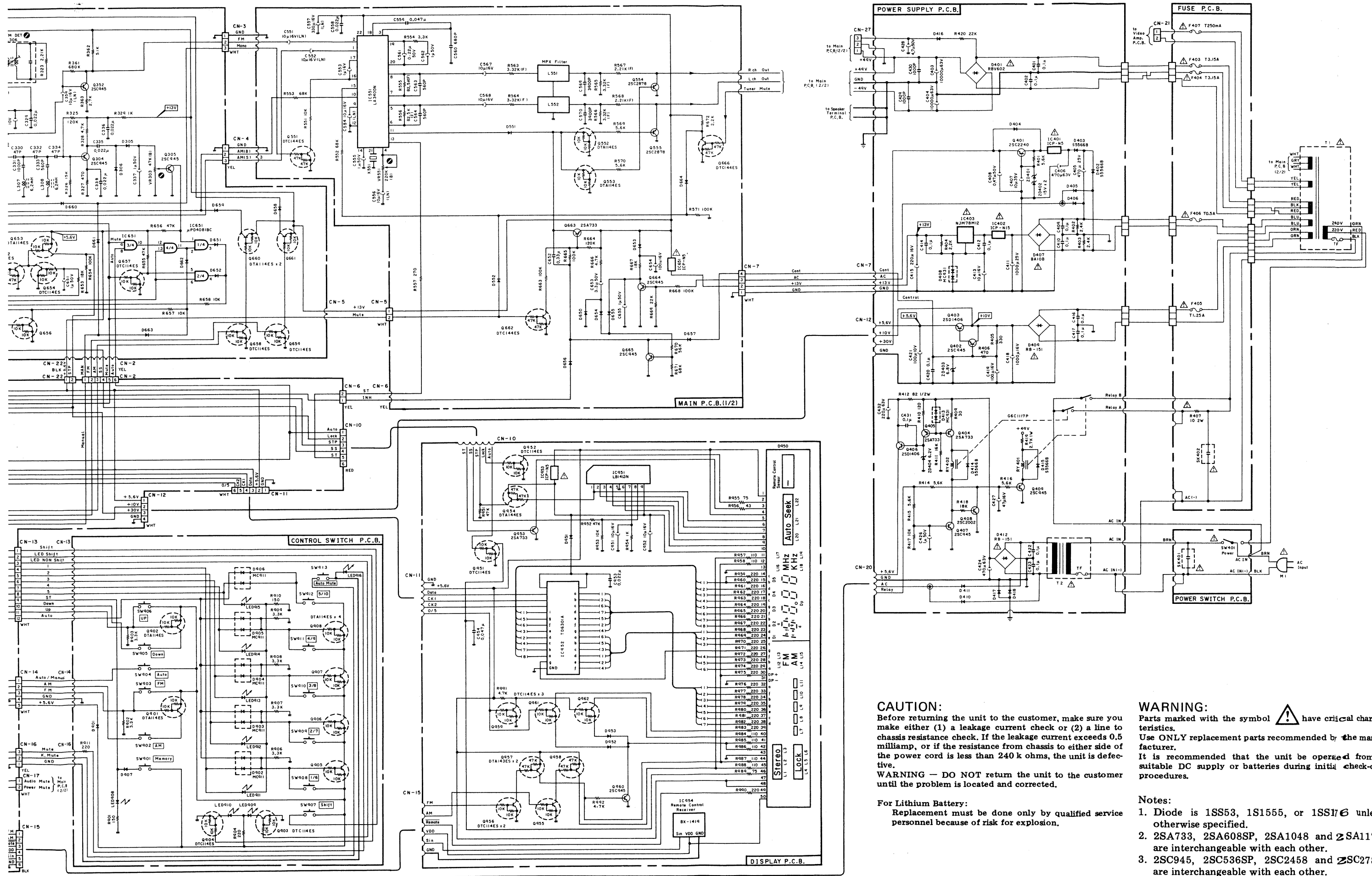


Fig. 6.2.2.2 For SR-4 (Australia)

CAUTION:

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective.

WARNING — DO NOT return the unit to the customer until the problem is located and corrected.

For Lithium Battery:

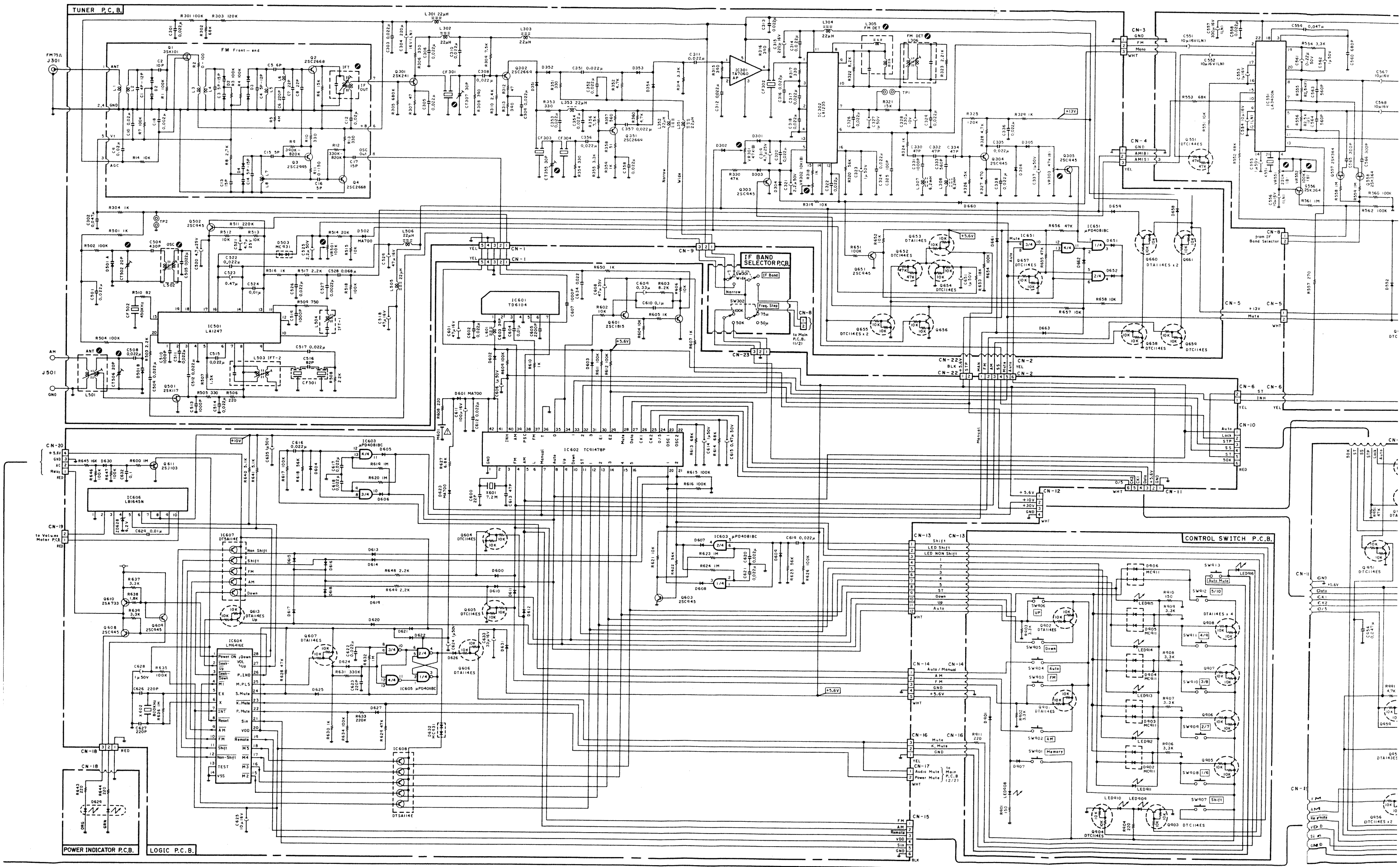
Replacement must be done only by qualified service personnel because of risk of explosion.

WARNING:

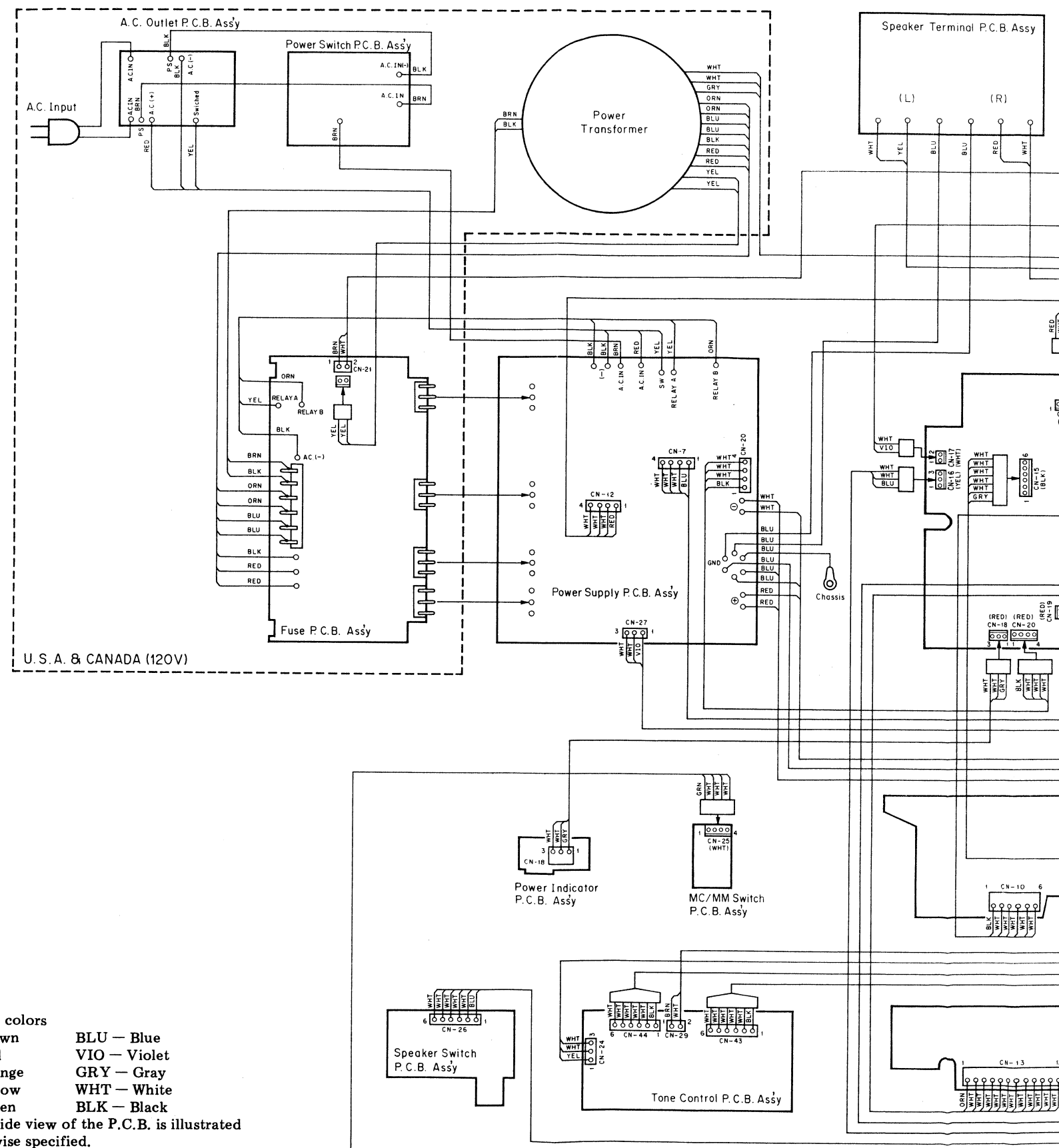
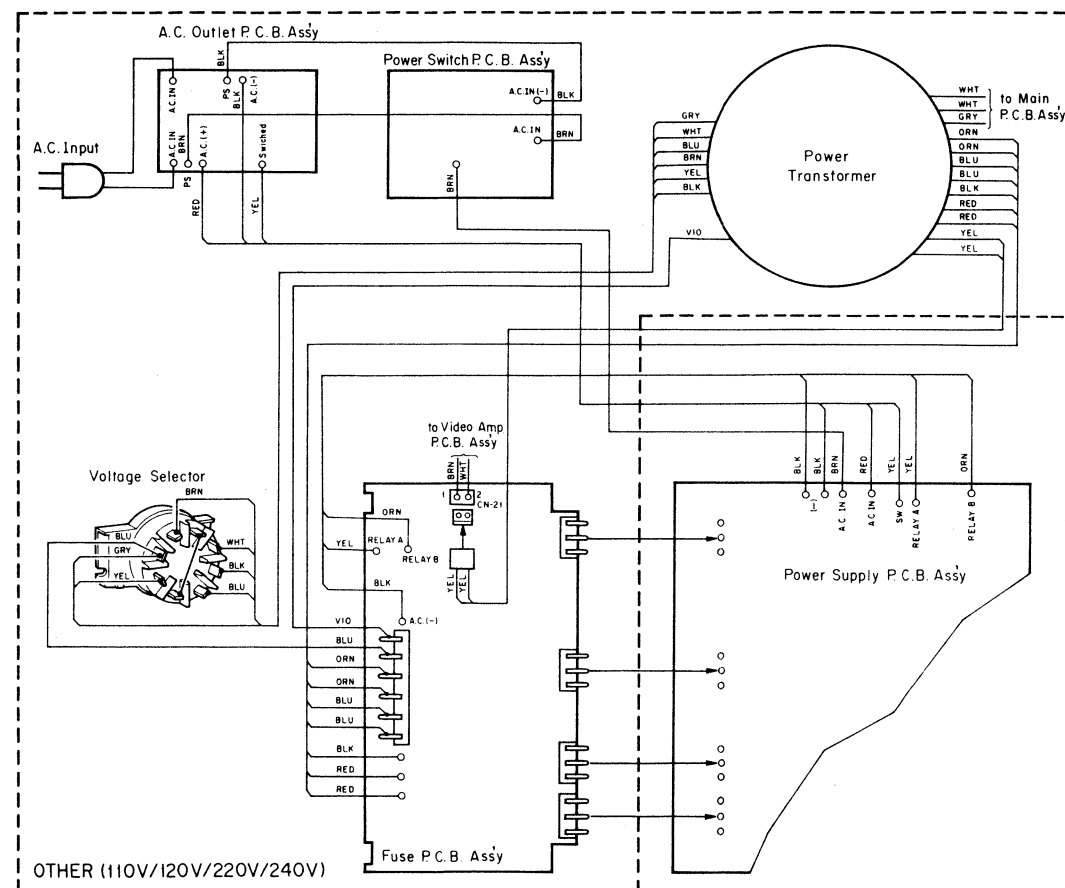
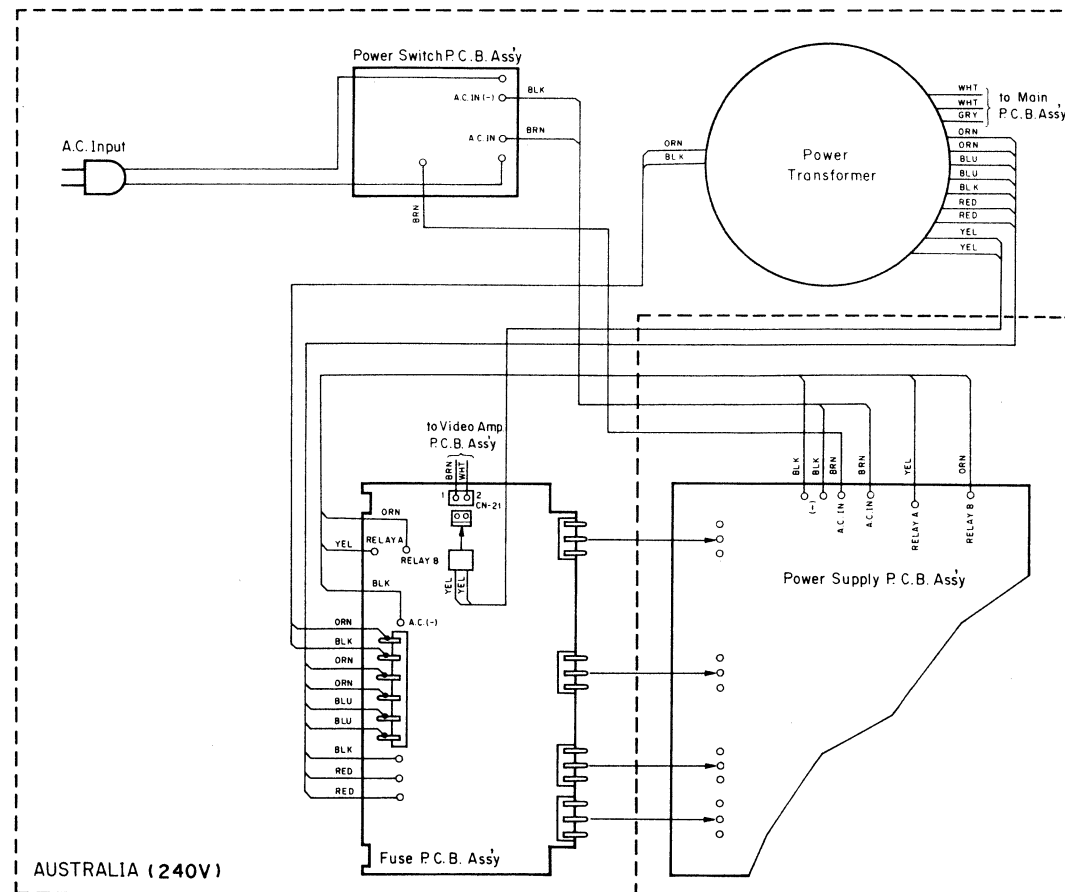
Parts marked with the symbol  have critical characteristics. Use **ONLY** replacement parts recommended by the manufacturer. It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

Notes:

- Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
- 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
- 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.



7. WIRING DIAGRAM



Notes:

- Table of wire colors

BRN — Brown	BLU — Blue
RED — Red	VIO — Violet
ORN — Orange	GRY — Gray
YEL — Yellow	WHT — White
GRN — Green	BLK — Black
- Component side view of the P.C.B. is illustrated unless otherwise specified.

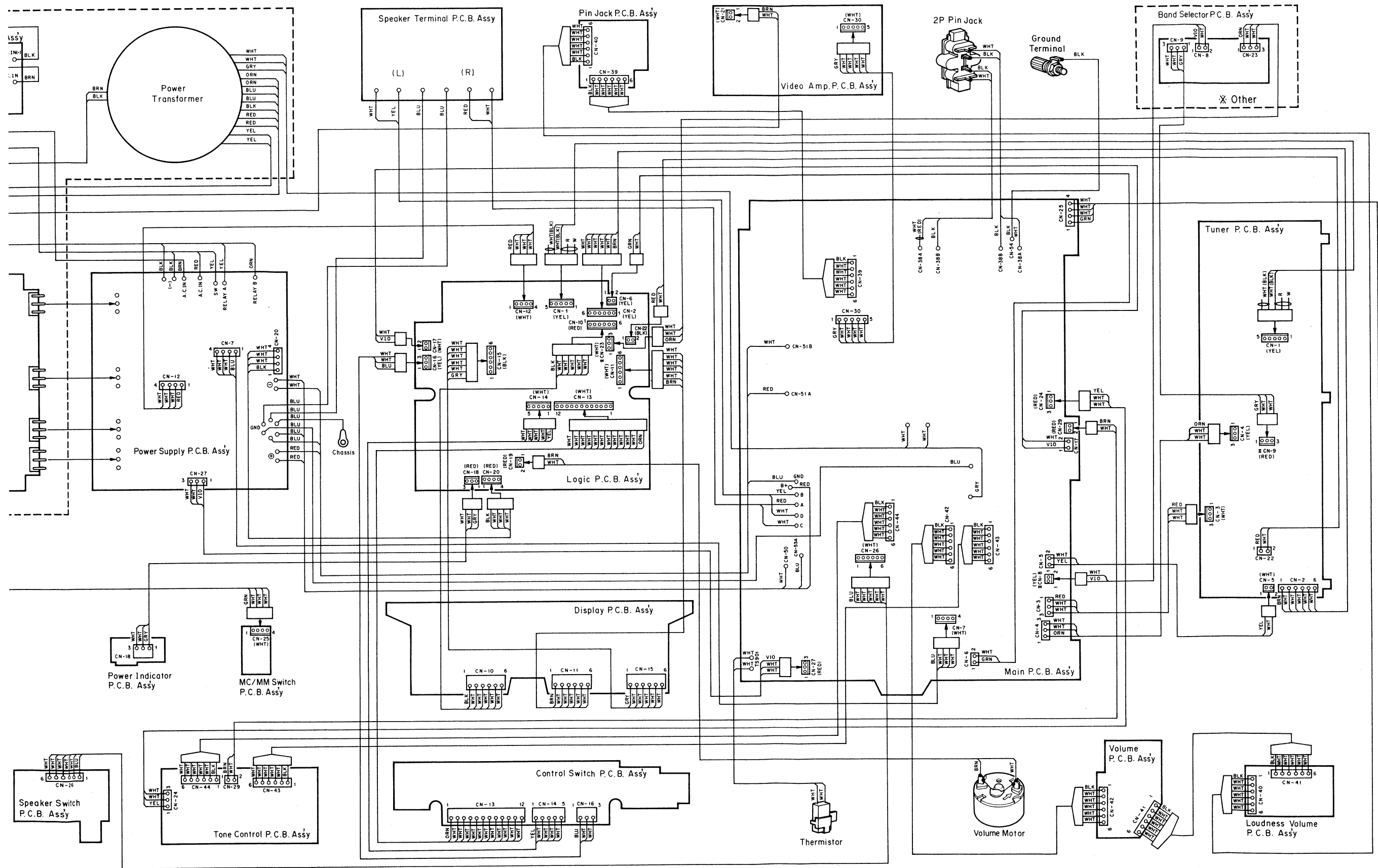


Fig. 7

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06849A	Main P.C.B. Ass'y	R113,213	OB09561A	RM 909K 1/4W F		OB83010A	PD Connector V90	C035,036	OB41803A	C 470P 50V J	F401,402	OB08457A	Fuse T500mA 250V
	— MPX —		R114,214	OB09562A	RM 75K 1/4W F		OB83002A	Ribbon Cable 6P	C701,801	OB09933A	CE 2.2μ 50V (LN)		OB08349B	Fuse Clip (4)
IC551	OB11245A	IC LA3400N	R115,215	OB25420A	RM 221K 1/6W F			190mm (1)	C702,802	OB41223A	CP 820P 100V J		OM04957A	Fuse Label
IC651	OB11248A	IC ICP-N5-T104	R116,117	OB25387A	RM 100K 1/6W F			4P Pin Jack (2)	C703,803	OB41282A	CMM 4700P 50V J			T500mA x2 (1)
Q551,662	OB10062A	TR DTC144ES	R116,217	OB09677A	RK 1K 1/6W J		OB81593A	6P Pin Jack (1)	C704,804	OB40421A	CE 220μ 25V (LN)			
Q552,553			R119,219	OB25258A	RM 4.53K 1/6W F		OB81594A	Phono Input P.C.B. Ass'y	C705,805	OB41225A	CP 1000P 100V J			
Q554,555	OB10058A	TR DTA114ES	R120,125	OB09749A	RK 1M 1/6W J		BA06895A		C706,806	OB41508A	C 56P 50V J			
Q663	OB06299A	TR 2SC2878	R220,225						C707,807	OB41702A	CSP 22P 50V J			
Q664,665	OB06013A	TR 2SA733 (P,Q)	R121,128	OB09741A	RK 470K 1/6W J				C708,808	OB41594A	CM 0.1μ 100V J			
D551,552	OB01872A	TR 2SC945L (P,Q)	R122,222						C711,811	OB41791A	CSP 1000P 50V J			
650,653	OB06398A	SID 1SS176	R123,223						TP1,2	OB81634A	2P-T Post			
654,655			R124,224						CN44	OB81013A	Dip Mate 6P			
656,657			R126								WH6D-1			
664			R129								RED (1)			
L551,552	OB51237A	MPX Filter	C033,034								PD Connector V440			
		TF-1042B-1013-00	C039,040								WHT (2)			
VR551	OB32066A	Semi VR 220K (B)	C101,201								YEL (1)			
X551	OB90172A	Ceramic Filter	C102,202								PD Connector V440			
		CSB456F11	C103,109								RED (2)			
R551	OB09701A	RK 10K 1/6W J	C104,204								PD Connector V130			
R552,553	OB09721A	RK 68K 1/6W J	C105,106								(2)			
R554			C114,205											
R555,556	OB09689A	RK 3.3K 1/6W J	C115,211											
R557	OB25379A	RM 82.5K 1/6W F	C116,212											
R563,564	OB09663A	RK 270 1/6W J	C117,213											
565,566	OB25245A	RM 3.32K 1/6W F	C118,214											
R567,568	OB25228A	RM 2.21K 1/6W F	C119,215											
R569,570	OB09695A	RK 5.6K 1/6W J	C120,216											
R571,663	OB09725A	RK 100K 1/6W J	C121,217											
665,668			C122,218											
R664	OB09727A	RK 120K 1/6W J	C123,219											
R666	OB09693A	RK 4.7K 1/6W J	C124,220											
R667	OB09707A	RK 18K 1/6W J	C125,221											
R669	OB09709A	RK 22K 1/6W J	C126,222											
R670	OB09719A	RK 56K 1/6W J	C127,223											
R672	OB09685A	RK 2.2K 1/6W J	C128,224											
C551,552	OB09816A	CE 10μ 16V (LN)	C129,225											
554,556			C130,226											
C553,555			C131,227											
562,565			C132,228											
C557	OB01405A	CE 1μ 50V	C133,229											
C558			C134,230											
C559	OB40418A	CE 330μ 16V (LN)	C135,231											
C560	OB41290A	CM 0.022μ 50V J	C136,232											
C561	OB41555A	CC 0.047μ 25V Z	C137,233											
C562	OB09287A	CC 680P 50V K	C138,234											
C563,564	OB40023A	CE 0.22μ 50V	C139,235											
C567,568	OB41404A	CP 560P 50V J	C140,236											
C569,570	OB01412A	CE 10μ 16V	C141,237											
C652	OB41281A	CM 3900P 50V J	C142,238											
C653	OB41304A	CMM 0.33μ 50V J	C143,239											
C654	OB01863A	CE 3.3μ 50V	C144,240											
CN3	OB01400A	CE 100μ 16V	C145,241											
CN4	OB82943A	3P Connector WHT	C146,242											
CN5	OB82944A	3P Connector YEL	C147,243											
CN6	OB81223A	2P-T Post WHT	C148,244											
CN7	OB82946A	2P Connector YEL	C149,245											
	OB81231A	4P-T Post WHT	C150,246											
	— Eq. Amp. —		C151,247											
IC101	OB11204A	IC NJM5532DD	C152,248											
IC102	OB11005A	IC NJM072DE	C153,249											
Q101,102	OB10195A	FET 2SK146 (BL,V)	C154,250											
Q103,104			C155,251											
Q113,213	OB06299A	TR 2SC2878	C156,252											
D101,102	OB01872A	TR 2SC945L (P,Q)	C157,253											
103,201	OB06398A	SID 1SS176	C158,254											
ZD101,201			C159,255											
ZD102			C160,256											
RY103,203	OB12451A	ZD 10V UTZJ10B	C161,257											
R101,201	OB12469A	ZD 18V UTZJ18B	C162,258											
R102,202	OB90243A	Relay G5A237P	C163,259											
R103,203	OB09453A	RM 51.1K 1/4W F	C164,260											
R104,204	OB22567A	RM 100 1/4W F	C165,261											
R105,106	OB22684A	RM 5.62 1/4W F	C166,262											
205,206	OB09695A	RK 5.6K 1/6W J	C167,263											
R107,207	OB25260A	RM 4.75K 1/6W F	C168,264											
R108,208			C169,265											
R109,209	OB09609A	RK 1.5 1/6W J	C170,266											
R110,210	OB25217A	RM 1.69K 1/6W F	C171,267											
R111,211	OB22635A	RM 1.21K 1/4W F	C172,268											
R112,212	OB09891A	RM 80.6 1/4W F	C173,269											
	OB22643A	RM 47.5 1/4W F	C174,270											
	OB22576A	RM 475 1/4W F	C175,271											

3.18. Phono Input P.C.B. Ass'y

Note: This P.C.B. Ass'y is included in the Input Selector section of the Main P.C.B. Ass'y.

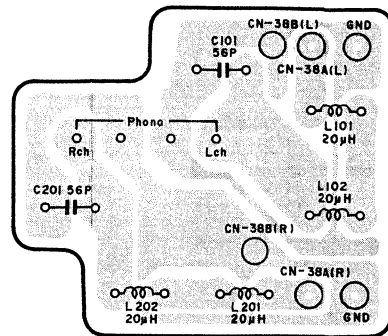


Fig. 3.18

caption	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
B. Ass'y	R113,213 R114,214 R115,215 R116,117 216,217 R118,218 R119,219 R120,125 220,225 R121,128 221,228 R122,222 R123,223 R124,224 R126 R129 C033,034 C039,040 C101,201 C102,202 C103,109 156F11 1/6W J 1/6W J 1/6W J K 1/6W F 1/6W J K 1/6W F K 1/6W F 1/6W J 1/6W J 1/6W J 1/6W J 1/6W J 16V (LN) JV 16V (LN) 2μ 50V J 7μ 25V Z 50V K 50V J 50V J 16V P 50V J μ 50V J 50V 16V stor WHT stor YEL WHT stor YEL WHT 5332DD 72DE 46 (BL,V) 878 45L (P,Q) 76 UTZJ10B UTZJ18B 237P C 1/4W F 1/4W F 1/4W F 1/6W J C 1/6W F 1/6W J C 1/6W F C 1/4W F 1/4W F 1/4W F	OB09561A OB09562A OB25420A OB25387A OB09677A OB25258A OB09749A OB09741A OB25212A OB09305A OB09491A OB09725A OB09727A OB09545A OB09486A OB41703A OB41304A OB41238A OB41377A OB09816A OB40422A OB41225A OB41117A OB41119A OB09933A OB05582A OB40117A OB41791A OB41789A OB70078A — Input Selector — OB06142A OB06372A OB06322A OB06013A OB06398A OB90243A OB51252A OB09733A OB09707A OB09725A OB09717A OB09709A OB09697A OB09689A OB09719A OB41007A OB41217A OB41298A OB40265A OB40027A OB70100A OB70103A OB82957A OB81229A OB81231A OB82968A OB81013A OB82751A OB82992A OB83007A OB83008A OB83009A	RM 909K 1/4W F RM 75K 1/4W F RM 221K 1/6W F RM 100K 1/6W F RK 1K 1/6W J RM 4.53K 1/6W F RK 1M 1/6W J RK 470K 1/6W J RM 1.50K 1/6W F RM 100K 1/4W F RM 1K 1/4W F RK 100K 1/6W J RK 120K 1/6W J C 330P 50V J C 120P 50V J CSP 100P 50V J CMM 0.33μ 50V J CP 3600P 100V J CM 0.27μ 63V J CE 10μ 16V (LN) CE 220μ 10V (LN) CP 1000P 100V J CP 470P 100V G CP 560P 100V G CE 2.2μ 50V (LN) CM 0.022μ 50V J CE 22μ 50V J CSP 1000P 50V J CSP 510P 50V J Slide Switch SSSP12 TR 2SC2240 (BL) TR 2SA953 (K,L) TR 2SC2002 (K,L) TR 2SA733 (P,Q) SID 1SS176 (6) Relay 24V G5A237P Bead Core RK 220K 1/6W J RK 18K 1/6W J RK 100K 1/6W J RK 47K 1/6W J RK 22K 1/6W J RK 6.8K 1/6W J RK 3.3K 1/6W J RK 56K 1/6W J CC 1000P 25V CP 470P 100V J CMM 0.1μ 50V J CE 0.1μ 50V CE 2.2μ 50V Slide Switch ESA26132 Slide Switch ESA26572 2P Connector WHT 3P-T Post RED 4P-T Post WHT 5P Connector WHT Dip Mate 6P WH6D-1 PD Connector V80 PD Connector V150 WHT (2) PD Connector V130 PD Connector V150 (1) PD Connector V170 (1)	IC103 Q105,106 205,206 Q107,110 207,210 Q108,109 208,209 Q111,112 211,212 ZD103,203 ZD104,204 D104 R131-135 231-235 R136,236 R144,148 244,248 R145,245 R146,246 R147,247 R149,249 R150,250 R151,251 R152,252 R153,253 R154,254 R164,264 R165,166 265,266 C037,038 C118,218 C122,222 C131,231 CN42,43 Q701,801 Q702,703 802,803 Q704,707 804,807 Q705,706 805,806 ZD701,801 VR701,801 R701,801 R702,802 R703,710 803,810 R704,804 R705,805 R706,806 R707,807 R708,808 R709,809 R712,715 718,812 815,818 R713,813 R714,814 R716,717 816,817 R719,720 819,820 R721,734 821,834 R722,733 822,833 R735-738 835-838 R739,839 R749,849 R752,852	OB83010A OB83002A OB81593A OB81594A BA06895A — Flat Amp. — OB11070A OB10193A OB10050A OB06142A OB06299A OB12433A ZD 5.6V UTZJ5.6B ZD 12V UTZJ12B SID 1SS176 OB25387A OB25195A RM 1.00K 1/6W F OB25099A RM 100 1/6W F OB25437A RM 332K 1/6W F OB25238A RM 2.80K 1/6W F OB25316A RM 18.2K 1/6W F OB25295A RM 11.0K 1/6W F OB25236A RM 2.67K 1/6W F OB25176A RM 634 1/6W F OB09695A RK 5.6K 1/6W J OB09685A RK 2.2K 1/6W J OB09677A RK 1K 1/6W J OB09653A RK 100 1/6W J OB09717A RK 47K 1/6W J OB41803A CE 470P 50V J OB09816A CE 10μ 16V (LN) OB41704A CSP 330P 50V J OB41609A C 5P 50V Z OB81013A Dip Mate 6P WH6D-1 Ribbon Cable 6P 230mm (1) — Power Amp. — OB10125A TR 2SC2259 OB06142A TR 2SC2240 (BL) OB10204A TR 2SA1145 (O,Y) OB10205A TR 2SC2705 (O,T) OB12445A ZD 8.2V UTZJ8.2B Semi VR 4.7K (B) OB09472A RM 220K 1/4W F OB22567A RM 100 1/4W F OB22747A RM 42.2K 1/4W F OB22550A RM 1.02K 1/4W F OB01679A RK 100 1/4W J OB25486A RM 374 1/4W F OB24111A RF 22K 1/2W J OB01846A RK 4.7K 1/4W J OB22748A RM 2.05K 1/4W F OB22632A RM 75 1/4W F OB05623A RK 1.2K 1/4W J OB25487A RM 220 1/4W F OB09420A RM 2.2K 1/4W F OB05675A RK 3.9K 1/4W J OB24110A RF 10 1/2W J OB22700A RM 3.32 1/4W F OB24094A RC 1 5W K OB24137A RF 5.6 2W OB24138A RF 330 2W OB01683A RK 15K 1/4W J	C035,036 C701,801 C702,802 C703,803 C704,804 C705,805 C706,806 C707,807 C708,808 C711,811 TP1.2 CN44 IC NJM072S	OB41803A OB09933A OB41223A OB41282A OB40421A OB41225A OB41508A OB41702A OB41594A OB41791A OB81634A OB81013A OB82980A OB82981A OB82982A OB83007A — Protector — OB11246A OB10204A OB10205A OB06322A Q901 OB06398A OB12439A OB12442A OB12463A OB90199A OB90243A OB01681A OB05668A OB09509A OB05627A OB05641A OB01888A OB01889A OB01683A OB05508A OB01933A OB24136A OB24139A OB09725A OB40408A OB40116A OB09372A OB01400A OB81239A OB81229A — Regulator — OB06013A OB01872A OB10210A OB10209A OB06322A OB06372A OB12445A OB12457A OB12418A OB09719A OB09662A OB09695A OB09701A OB09681A OB09685A OB09687A OB40428A OB41791A OB81225A	C 470P 50V J CE 2.2μ 50V (LN) CP 820P 100V J CMM 4700P 50V J CE 220μ 25V (LN) CP 1000P 100V J C 56P 50V J CSP 22P 50V J CM 0.1μ 100V J CSP 1000P 50V J 2P-T Post Dip Mate 6P WH6D-1 PD Connector V440 RED (1) PD Connector V440 WHT (2) PD Connector V440 YEL (1) PD Connector V130 (2) — IC μPC1237H TR 2SA1145 (O,Y) TR 2SC2705 (O,T) Pair TR 2SC2002 (K,L) TR 2SA970 (BL) SID 1SS176 ZD 6.8V UTZJ6.8B ZD 7.5V UTZJ7.5B ZD 15V UTZJ15B Relay 24V AJR32327 Relay 24V G5A237P RK 3.3K 1/4W J RK 82K 1/4W J RK 20K 1/4W J RK 330K 1/4W J RK 47K 1/4W J RK 10K 1/4W J RK 100K 1/4W J RK 15K 1/4W J RK 56K 1/4W J RK 220 1/4W J RF 1K 3W RF 2.2K 1W RK 100K 1/6W J CE 330μ 10V (BP) CE 10μ 50V CE 2.2μ 50V CE 100μ 16V 6P-T Post WHT 3P-T Post RED TR 2SA733 (P,Q) TR 2SC945L (P,Q) TR 2SC1826 (O,Y) TR 2SA768 (O,Y) TR 2SC2002 (K,L) TR 2SA953 (K,L) ZD 8.2V UTZJ8.2B ZD 12V UTZJ12B SID UB-151 RK 56K 1/6W J RK 240 1/6W J RK 5.6K 1/6W J RK 10K 1/6W J RK 1.5K 1/6W J RK 2.2K 1/6W J RK 2.7K 1/6W J CE 2200μ 35V (LN) CSP 1000P 50V J 2P-T Post RED	F401,402 <			

3.18. Phono Input P.C.B. Ass'y

Note: This P.C.B. Ass'y is included in the Input Selector section of the Main P.C.B. Ass'y.

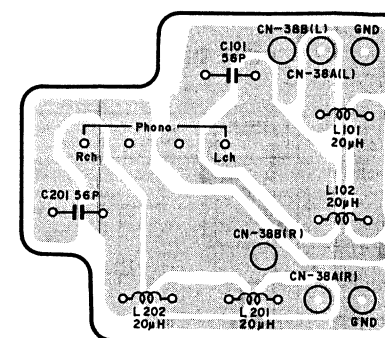


Fig. 3.18

Service Information

Model Nakamichi SR-4E (Germany)
 Serial No. (Stereo Receiver)
 Subject from D10601001 -
 Service Manual for SR-4E (Germany)



No. OOD-SI-3104 (1/24)
 Date 24 August 1987

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3. 8.	Speaker Terminal P.C.B. Ass'y	8
3. 9.	Tone Control P.C.B. Ass'y	8
3. 10.	Fuse P.C.B. Ass'y	9
3. 11.	Video Amp. P.C.B. Ass'y	10
3. 12.	Control Switch P.C.B. Ass'y	11
3. 13.	Power Supply P.C.B. Ass'y	12
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1. GENERAL

1.1. Introduction

For the following items, refer to the Service Manual SR-4/SR-4A which has already been issued by Nakamichi.

- o Parts Location for Electrical Adjustment
- o Electrical Adjustments: Apply the adjustment procedures for Australia version.
- o IC Block Diagrams
- o Block Diagrams

1.2. Package Ass'y and Accessory Ass'y

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
	FA03594A	Package Ass'y (SR-4E (Germany))	1		DA04056A	Accessory Ass'y (SR-4E (Germany))	1
01	OF04058A	Carton Box (SR-4E)	1	01	OB90070A	AM Loop Antenna Holder	1
02	OF04041A	Packing L	1	02	OB90081A	Feeder Antenna	1
03	OF04042A	Packing R	1	03	OB90208A	Antenna Adapter EP	1
04	OF03670A	Poly-Sheet	1	04	OB90198A	AM Loop Antenna	1
				05	OB90242A	Battery	1
				06	DA04042A	Remote Control Unit	1
				—	OD03092B	Poly-Bag 320x340x0.08	1
				—	OD04449A	Important Notice Card	1
				—	OD04764B	Owner's Manual SR-4E/3E/2E, SR-4/3/2 (English/German/French)	1
				—	OF04043A	Poly-Bag 80x150	1

2. MECHANISM ASS'Y AND PARTS LIST

2.1. Synthesis

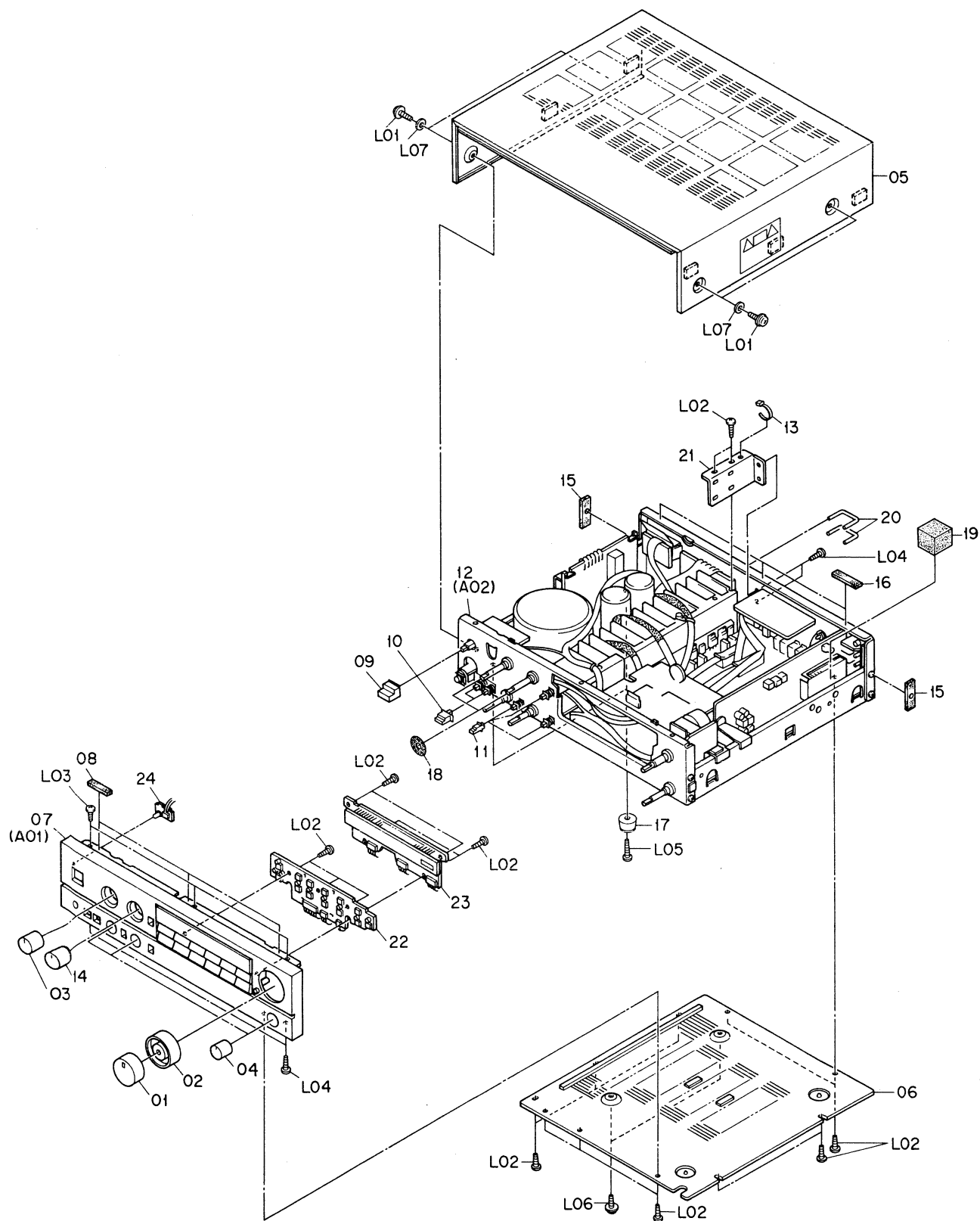


Fig. 2.1

2.2. Front Panel Ass'y (A01)

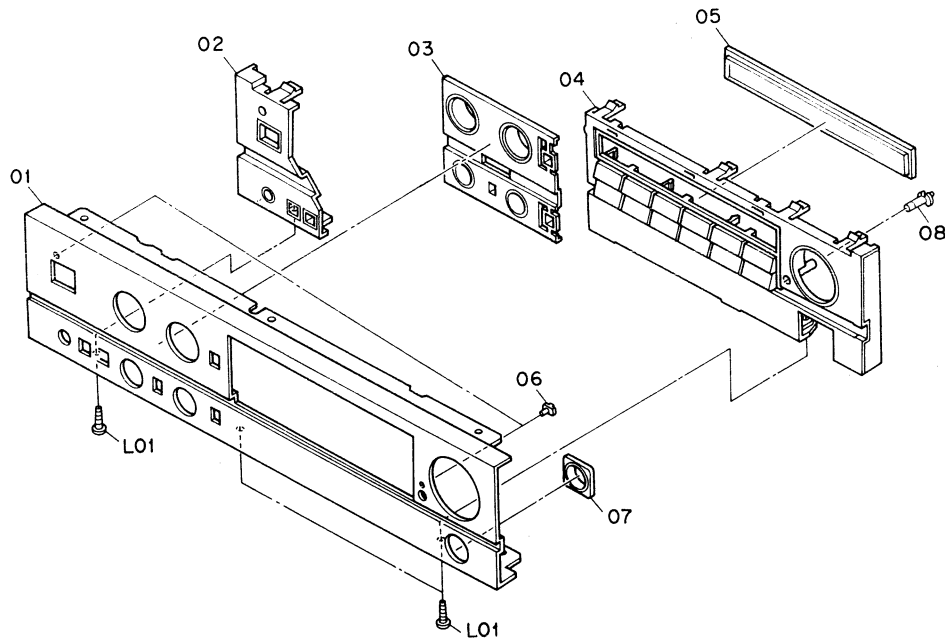


Fig. 2.2

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
		Synthesis Serial No.: D10601001 -		A01	HA05271A	Front Panel Ass'y (SR-4E (Germany)) Serial No.: D10601001 -	1
01	HA05241A	Volume Knob Ass'y	1				
02	HA05242A	Balance Knob Ass'y	1	01	OH05086A	Front Panel	1
03	HA05105A	Selector Knob Ass'y	1	02	OH04935C	Front Escutcheon L	1
04	HA05106A	Tone Control Knob Ass'y	3	03	OH04936A	Front Escutcheon C	1
05	HA05234A	Top Cover Ass'y (Consisting of the followings:)	1	04	HA05224A	Front Escutcheon R Ass'y	1
	(OH04934C)	Top Cover	(1)	05	OH04938A	Display Lens	1
	(OJ05261A)	Top Cover Cushion	(5)	06	OH05039A	Power Lens	2
	(OM04377B)	Caution Label	(1)	07	OH05040A	Loudness Escutcheon	1
	(MA01001A)	F. Code Labels	(1)	08	OH05041A	Muting Switch Knob	1
06	JA04283A	Bottom Cover Ass'y (Consisting of the followings:)	1	L01	OE00921A	BT3x8 ⊕ Binding (Black Chromate)	3
	(OE00888A)	BT3x12 ⊕ Binding	(2)				
	(OJ05162A)	Leg T-S	(2)				
	(OJ05309A)	BS Damper 1 VR	(2)				
	(OJ05324C)	Bottom Cover	(1)				
	(OJ05367A)	Heat Sink Cushion	(1)				
	(OM04377B)	Caution Label	(1)				
07	HA05271A	Front Panel Ass'y (SR-4E (Germany))	1				
08	OJ05364A	Top Cover Cushion T4	5				
09	OH04947A	Power Switch Knob	1				
10	OH04950B	Push Switch Knob 10L	2				
11	OH04949B	Push Switch Knob 5L	3				
12	JA04289A	Chassis Ass'y (SR-4E (Germany))	1				
13	OB90019A	Insu-Lock SKB80	37				
14	HA05243A	Selector Knob Ass'y	1				
15	OJ05226A	Side Cushion	2				
16	OJ05363A	Top Cover Cushion T3	3				
17	OJ05162A	Leg T-S	2				
18	OJ05258B	Selector Knob Himelon	2				
19	OJ05365A	Front-end Cushion	1				
20	OB90256A	U-shape Pin 14	2				
21	OJ05204B	Heat Sink Holder C	1				
22	BA06593A	Control Switch P.C.B. Ass'y	1				
23	BA06646A	Display P.C.B. Ass'y	1				
24	BA06645A	Power Indicator P.C.B. Ass'y	1				
L01	OE03032A	BT4x8 ⊕ Pan Washer-faced (Black Chromate)	4				
L02	OE00868A	BT3x8 ⊕ Binding	19				
L03	OE00857A	BT3x6 ⊕ Binding	3				
L04	OE00921A	BT3x8 ⊕ Binding (Black Chromate)	4				
L05	OE00888A	BT3x12 ⊕ Binding	2				
L06	OE03157A	BT3x8 ⊕ Binding with Washer	2				
L07	OE03410A	Washer 4.3x8x0.8	4				
—	OM04897A	Serial No. Seal	1				
—	OM04952A	DBP Label	1				

2.3. Chassis Ass'y (A02)

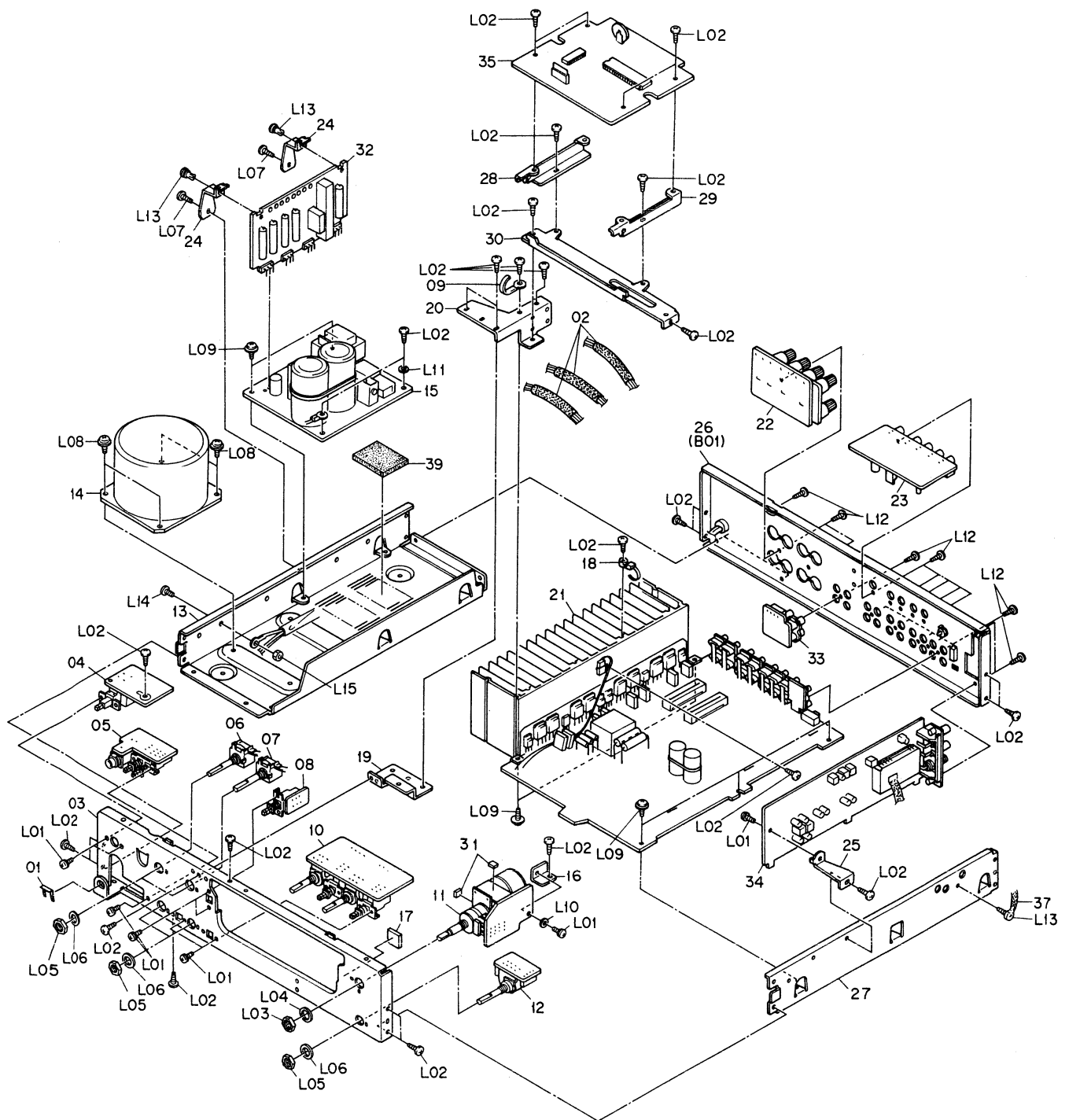


Fig. 2.3

2.4. Rear Panel Ass'y (B01)

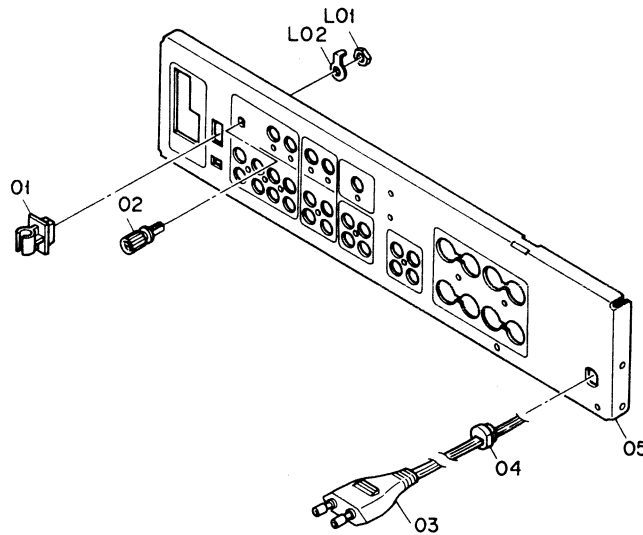


Fig. 2.4

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
A02	JA04289A	Chassis Ass'y (SR-4E (Germany)) Serial No.: D10601001 -	1	L16	OE03321A	ST3x6 @ Binding	1
01	OJ05092A	Snap Plate	1	—	OJ05373B	Diode Barrier	1
02	OB80126A	Glass Fiber Tube	3	—	OM04956A	Lithium Battery Caution Label	1
03	OJ05339A	Front Chassis	1	—	OM03700A	Earth Mark Label	1
04	BA06845A	Power Switch P.C.B. Ass'y	1	B01	HA05268A	Rear Panel Ass'y (SR-4E (Germany)) Serial No.: D10601001 -	1
05	BA06600A	Speaker Switch P.C.B. Ass'y	1	01	OB90071A	AM Loop Antenna Holder	1
06	OB70101A	Rotary Switch 370mm	1	02	OB81604A	Ground Terminal T-5435	1
07	OB70102A	Rotary Switch 340mm	1	03	OB90270A	Power Cord	1
08	BA06608A	MM/MC Switch P.C.B. Ass'y	1	04	OB08325A	Cord Bushing SR-6W-1	1
09	OE03145A	Coating Clip CS-9	1	05	OH05087A	Rear Panel	1
10	BA06598A	Tone Control P.C.B. Ass'y	1	L01	—	Nut Ground Terminal	(1)
11	BA06597A	Volume Motor P.C.B. Ass'y	1	L02	—	Earth Lug (Ground Terminal)	(1)
12	BA06604A	Loudness Volume P.C.B. Ass'y	1				
13	OJ05325B	Power Supply Chassis	1				
14	OB50088A	Power Transformer	1				
15	BA06599A	Power Supply P.C.B. Ass'y	1				
16	OJ05331A	Motor Holder	1				
17	OJ05307A	BS Damper 1R	1				
18	OB90210A	Insu-Lock T30MR-HS	1				
19	OJ05323B	Heat Sink Holder B	1				
20	OJ05334A	Heat Sink Holder A	1				
21	BA06849A	Main P.C.B. Ass'y	1				
22	BA06843A	Speaker Terminal P.C.B. Ass'y	1				
23	BA06842A	Video Amp. P.C.B. Ass'y	1				
24	OJ05321A	Fuse P.C.B. Holder	2				
25	OJ05322A	Tuner P.C.B. Holder	1				
26	HA05268A	Rear Panel Ass'y (SR-4E (Germany))	1				
27	OJ05202C	Side Chassis	1				
28	OJ05332A	Logic P.C.B. Holder L	1				
29	OJ05333A	Logic P.C.B. Holder R	1				
30	OJ05340B	P.C.B. Holder	1				
31	OJ05366A	Volume Damper	2				
32	BA06848A	Fuse P.C.B. Ass'y	1				
33	BA06844A	Pin Jack P.C.B. Ass'y	1				
34	BA06846A	Tuner P.C.B. Ass'y	1				
35	BA06610A	Logic P.C.B. Ass'y	1				
36	OJ05380A	P.C.B. Cushion	1				
37	OB81738A	GND Wire	1				
L01	OE00612A	M3x6 @ Pan (2A)	9				
L02	OE00868A	BT3x8 @ Binding	26				
L03	—	Nut Hex. M9	(1)				
L04	—	Washer	(1)				
L05	—	Nut Hex. M7	(5)				
L06	—	Washer	(5)				
L07	OE00857A	BT3x6 @ Binding	2				
L08	OE03032A	BT4x8 @ Pan Washer-faced (Black Chromate)	4				
L09	OE03157A	BT3x8 @ Binding with Washer	7				
L10	OE03409A	Washer 3.2x5.7x1.2 (Copper)	1				
L11	OJ05294A	Washer 3.1x8x1 (Copper)	1				
L12	OE00921A	BT3x8 @ Binding (Black Chromate)	17				
L13	OJ05284A	Plastic Rivet 3x4.5	2				
L14	OE00506A	Nut Hex. M4	1				
L15	OE00929A	M4x8 @ Binding	1				

3. MOUNTING DIAGRAMS AND PARTS LIST

- Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.
 2. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
 3. Following transistors are interchangeable with each other.
 a. 2SA733, 2SA608SP, 2SA1048, 2SA1175
 b. 2SC945, 2SC536SP, 2SC2458, 2SC2785
 4. Abbreviation for part name:
 TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode, Varicap — Variable Capacitance Diode
 RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor, RW — Wire Wound Resistor
 CE — Electrolytic Capacitor, CM — Mylar Capacitor, CC — Ceramic Capacitor, CP — PP Capacitor
 CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor

3.1. Power Switch P.C.B. Ass'y

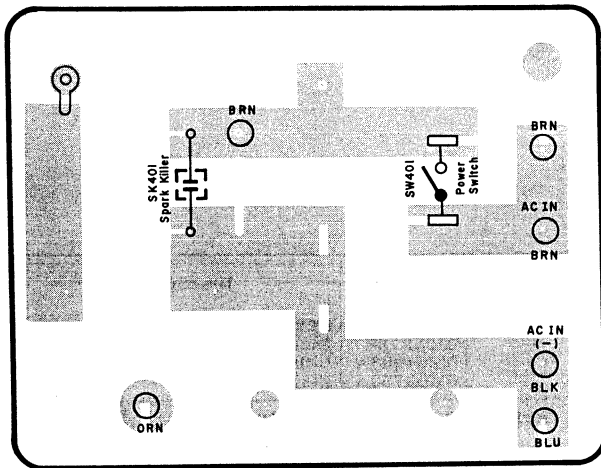


Fig. 3.1

3.2. Pin Jack P.C.B. Ass'y

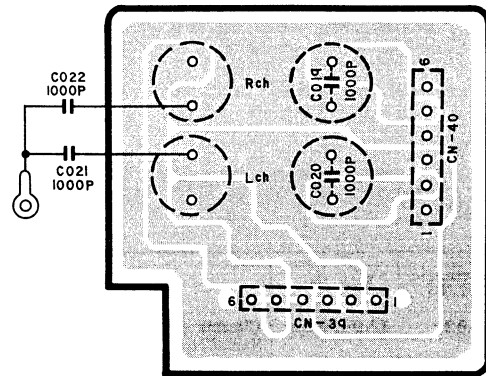


Fig. 3.2

3.3. Power Indicator P.C.B. Ass'y

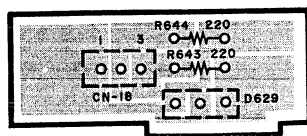


Fig. 3.3

3.4. MM/MC Switch P.C.B. Ass'y

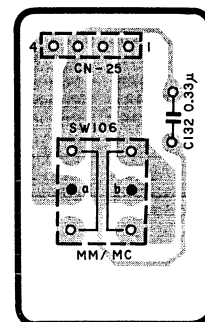


Fig. 3.4

3.5. Speaker Switch P.C.B. Ass'y

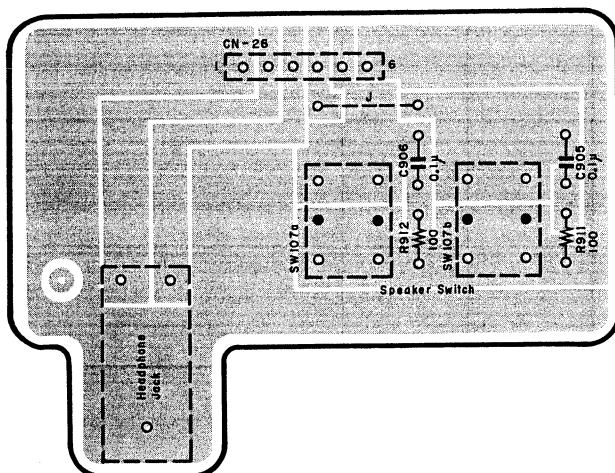


Fig. 3.5

3.6. Loudness Volume P.C.B. Ass'y

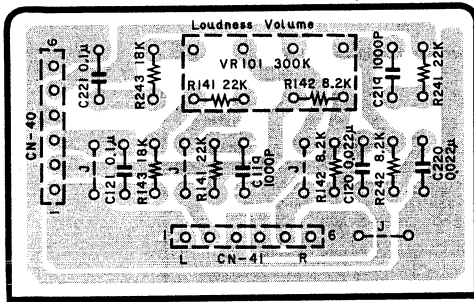


Fig. 3.6

3.7. Volume Motor P.C.B. Ass'y

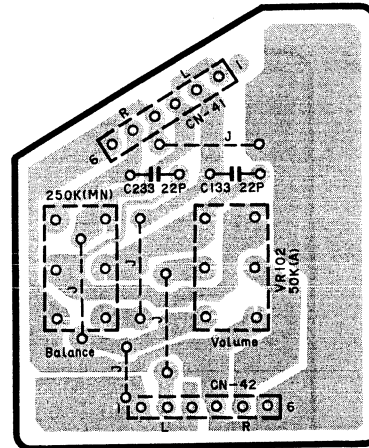


Fig. 3.7

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
SW401 SK401	BA06845A	Power Switch P.C.B. Ass'y	R911,912 C905,906 SW107 CN26	BA06600A	Speaker Switch P.C.B. Ass'y
	OB60443A	Power Switch P.C.B.		OB60444A	Speaker Switch P.C.B.
	OB71006A	Power Switch SDL1P		OB09653A	RK 100 1/6W J
	OB90264A	Spark Killer XE-333		OB41298A	CMM 0.1μ 50V J
	OB82994A	PD Connector V430 BRN (2)		OB70098A	Push Switch SPUN22
C019,020 021,022 CN39,40	OB82995A	PD Connector V430 BLK (1)	VR101 R141,241 R142,242 R143,243 C119,219 C120,220 C121,221 CN40,41	OB82966A	6P Connector WHT
	OE00752A	Eyelet 2x3 (2)		OB81478A	Headphone Jack (1)
	BA06844A	Pin Jack P.C.B. Ass'y		BA06604A	Loudness Volume P.C.B. Ass'y
	OB60435D	Pin Jack P.C.B.		OB60433D	Loudness Volume P.C.B.
	OB41007A	CC 1000P 25V		OB30075A	VR 300K (B)x2
D629 R643,644 CN18	OB81013A	Dip Mate 6P WH6D-1	OB82969A	OB09709A	RK 22K 1/6W J
	OB81710A	4P Pin Jack WH6D-1 (1)		OB09699A	RK 8.2K 1/6W J
	OB83133A	GND Wire (1)		OB09707A	RK 18K 1/6W J
	BA06645A	Power Indicator P.C.B. Ass'y		OB41791A	CSP 1000P 50V J
	OB60449A	Power Indicator P.C.B.		OB41290A	CM 0.022μ 50V J
C132 SW106 CN25	OB12421A	LED SRP-56PDWF (GRN/RED)	VR102 C133,233 C630 CN19 CN41,42	OB41298A	CMM 0.1μ 50V J
	OB09661A	RK 220 1/6W J		OB81013A	Dip Mate 6P WH6D-1
	OB82958A	3P Connector RED		BA06597A	Volume Motor P.C.B. Ass'y
	BA06608A	MM/MC Switch P.C.B. Ass'y		OB60434D	Volume Motor P.C.B.
	OB60436D	MM/MC Switch P.C.B.		OB30074A	Volume Motor Ass'y
C132 SW106 CN25	OB41304A	CMM 0.33μ 50V J	OB82959A	OB41702A	CSP 22P 50V J
	OB70105A	Push Switch SPUN12 6.5mm		OB41617A	CC 0.1μ 25V Z
	OB82965A	4P Connector WHT		OB82959A	2P Connector RED
				OB81013A	Dip Mate 6P WH6D-1



3.9. Tone Control P.C.B. Ass'y



Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R750,751 850,851 C025,026 027,028 C709,710 809,810	BA06843A	Speaker Terminal P.C.B Ass'y	IC104 VR103 VR104 R130 R155,156 157,159 255,256 257,259 R158,258 R160,260 R161,261 R162,262 R163,263 SW103,104 C116 C123,124 223,224	BA06598A	Tone Control P.C.B. Ass'y	C125,225 C126,226 C127,227 C128,228 C129,229 C130,230 CN24 CN29 CN43,44	0B41301A 0B41788A 0B41789A 0B40460A 0B41791A 0B41286A 0B82964A 0B83004A 0B81013A	CMM 0.18μ 50V J CSP 220P 50V J CSP 510P 50V J CE 3.3μ 50V (LN) CSP 1000P 50V J CM 0.01μ 50V J 3P Connector RED 2P Connector RED Dip Mate 6P WH6D-1
	0B60446A	Speaker Terminal P.C.B.		0B60432D	Tone Control P.C.B. IC NJM5532DD	C129,229	0B41789A	CSP 510P 50V J
	0B24140A	RF 22 1W		0B11204A	IC NJM5532DD	C128,228	0B41788A	CSP 220P 50V J
	0B41289A	CM 0.018μ 50V J		0B30073A	VR 20K (B)x2	C129,229	0B41791A	CSP 1000P 50V J
	0B41292A	CMM 0.033μ 50V J		0B30062A	VR 100K (B)x2	C130,230	0B41286A	CM 0.01μ 50V J
	0B81595B	Speaker Terminal 8P (1)		0B09731A	RK 180K 1/6W J	CN24	0B82964A	3P Connector RED
	0B83056B	GND Wire (1)		0B09698A	RK 7.5K 1/6W J	CN29	0B83004A	2P Connector RED
						CN43,44	0B81013A	Dip Mate 6P
								WH6D-1
								Ribbon Cable 6P 410mm (1)
						Ribbon Cable 6P 310mm (1)		

3.10. Fuse P.C.B. Ass'y

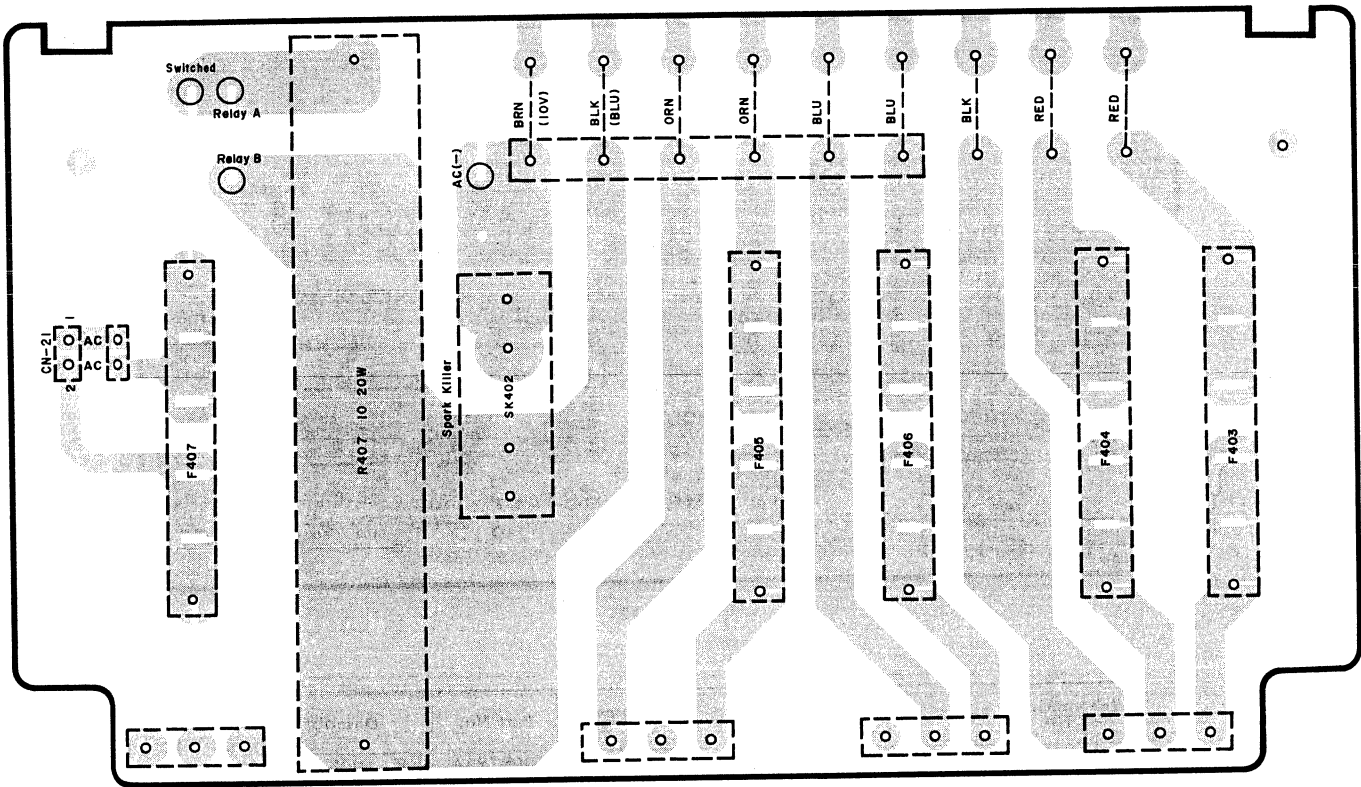


Fig. 3.10

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R407 SK402 F403,404 F405 F406 F407 CN21	BA06848A	Fuse P.C.B. Ass'y		0M04194A	Fuse Label T315mA (1)
	0B60447A	Fuse P.C.B.		0M04391A	Fuse Label T1.25A (1)
	0B24145A	RC 10 2W		0M04443A	Fuse Label T3.15Ax2 (1)
	0B90264A	Spark Killer			
	0B08281A	Fuse T3.15A 250V			
	0B02240A	Fuse T1.25A 250V			
	0B08263U	Fuse T315mA 250V			
	0B08252A	Fuse T250mA 250V			
	0B82961A	2P Connector WHT			
	0B81634A	2P-T Post (1)			
	0B81740A	6P Terminal (1)			
	0B81709A	3P-T Post L Angle (4)			
	0B08349B	Fuse Clip (10)			
	0M04137A	Fuse Label T250mA (1)			

3.11. Video Amp. P.C.B. Ass'y

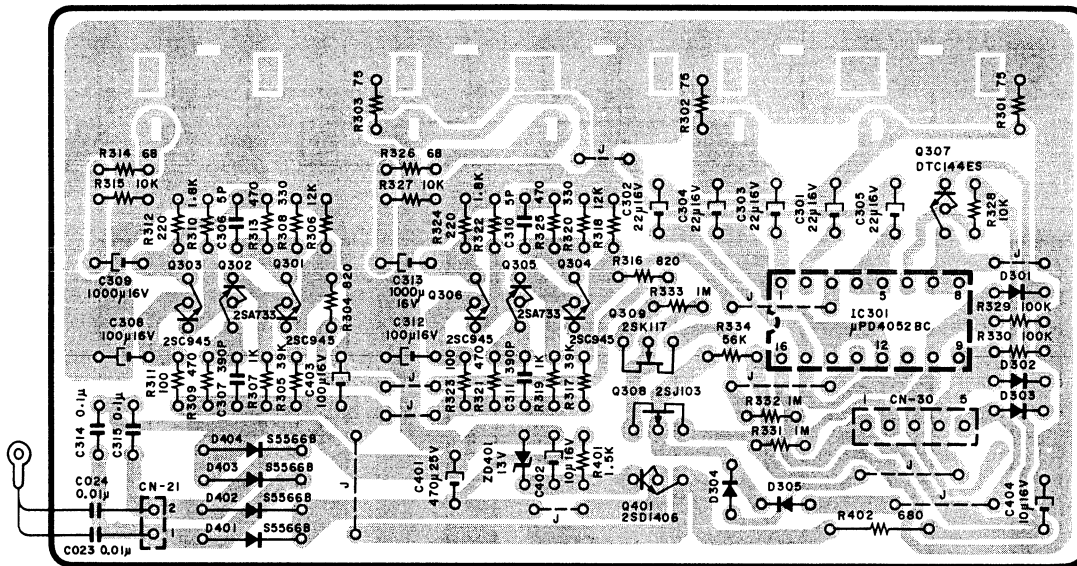


Fig. 3.11

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06842A	Video Amp. P.C.B. Ass'y	R329,330	OB09725A	RK 100K 1/6W J
			R331,332	OB09749A	RK 1M 1/6W J
			333		
IC301	OB60389E	Video Amp. P.C.B.	R334	OB09719A	RK 56K 1/6W J
Q301,303	OB11247A	IC μ PD4052BC	R401	OB09681A	RK 1.5K 1/6W J
304,306	OB01872A	TR 2SC945L (P,Q)	R402	OB05794A	RK 680 1/4W J
Q302,305	OB06013A	TR 2SA733 (P,Q)	C023,024	OB41286A	CM 0.01 μ 50V J
Q307	OB10062A	TR DTC144ES	C301,302	OB01862A	CE 22 μ 16V
Q308	OB10211A	FET 2SJ103	303,304		
Q309	OB06129A	FET 2SK117 (Y)	305		
Q401	OB06452A	TR 2SD1406 (Y)	C306,310	OB09276A	CC 5P 50V
D301-305	OB06398A	SiD 1SS176 (5)	C307,311	OB41002A	CP 390P 100V J
D401-404	OB12362A	SiD S5566B (4)	C308,312	OB01400A	CE 100 μ 16V
ZD401	OB12317A	ZD 13V MTZ13B	403		
R301,302	OB09650A	RK 75 1/6W J	C309,313	OB40082A	CE 1000 μ 16V
303			C314,315	OB41298A	CMM 0.1 μ 50V J
R304,316	OB09675A	RK 820 1/6W J	C401	OB40094A	CE 470 μ 25V
R305,317	OB09715A	RK 39K 1/6W J	C402,404	OB01412A	CE 10 μ 16V
R306,318	OB09703A	RK 12K 1/6W J	CN21	OB81223A	2P-T Post WHT
R307,319	OB09677A	RK 1K 1/6W J	CN30	OB81235A	5P-T Post WHT
R308,320	OB09665A	RK 330 1/6W J		OB81592B	Pin Jack 1P (5)
R309,313	OB09669A	RK 470 1/6W J		OB83133A	GND Wire 80 (1)
321,325					
R310,322	OB09683A	RK 1.8K 1/6W J			
R311,323	OB09653A	RK 100 1/6W J			
R312,324	OB09661A	RK 220 1/6W J			
R314,326	OB09649A	RK 68 1/6W J			
R315,327	OB09701A	RK 10K 1/6W J			
328					



3.12. Control Switch P.C.B. Ass'y

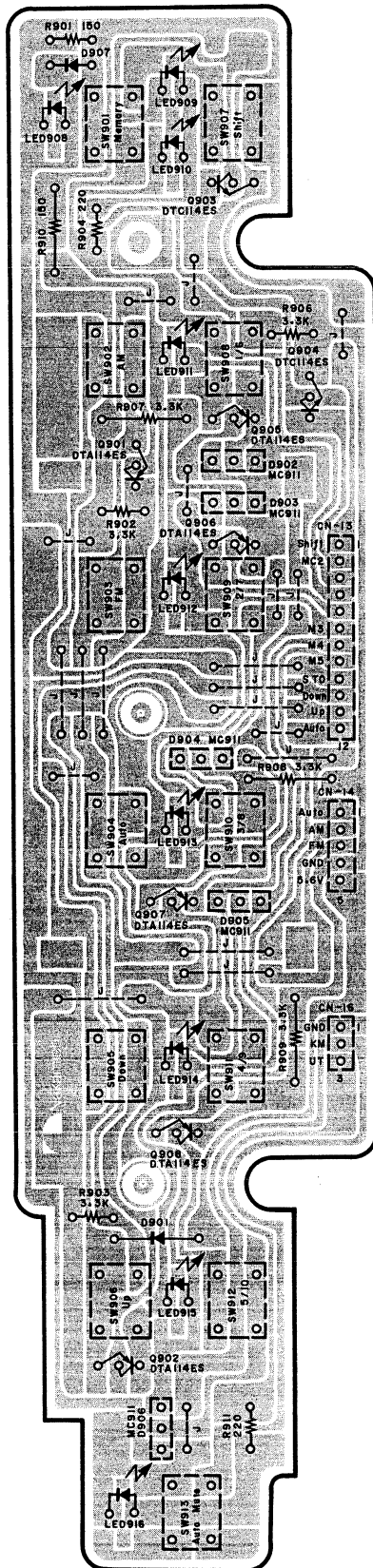


Fig. 3.12

Schematic Ref. No.	Part No.	Description
	BA06593A	Control Switch P.C.B. Ass'y
	0B60442A	Control Switch P.C.B.
Q901,902 905,906 907,908	0B10058A	TR DTA114ES
Q903,904 D901	0B10068A	TR DTC114ES
D902,903 904,905 906	0B06181A	SiD 1SS53
D907	0B12391A	SiD MC911
LED908- 916	0B06398A	SiD 1SS176
R901	0B12395A	LED SLR-34PC3F P-Green (9)
R902,903 906	0B09657A	RK 150 1/6W J
R904,911 R907,908 909	0B09689A	RK 3.3K 1/6W J
R910	0B09661A	RK 220 1/6W J
SW901-913	0B01681A	RK 3.3K 1/4W J
CN13	0B05795A	RK 150 1/4W J
CN14	0B70062A	Tact Switch KHH10910 (13)
CN16	0B82953A	12P Connector WHT
	0B82954A	5P Connector WHT
	0B82956A	3P Connector YEL
	0J05209B	LED Reflector (9)

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06599A	Power Supply P.C.B. Ass'y		OB82997B	PD Connector V150 RED (1)
	OB60440A	Power Supply P.C.B.		OB82998A	PD Connector V150 ORN (1)
IC401	OB11248A	IC ICP-N5-T104		OB82999B	PD Connector V150 YEL (2)
IC402	OB11335A	IC ICP-N15-T104		OB83003A	PD Connector V230 BLU (2)
Q401	OB10078A	TR 2SC2240 (GR)		OB83000A	GND Cable V070 BLU (1)
Q402,407	OB01872A	TR 2SC945L (P,Q)		OB90019A	Insu-Lock SKB80 (7)
409				OB90206A	Insu-Lock SKB4M (1)
Q404,405	OB06013A	TR 2SA733 (P,Q)		OE03355A	Earth Lug MET31-0113 (1)
Q408	OB06322A	TR 2SC2002 (K,L)		OJ05309A	BS Damper 1VR (1)
D402,403	OB12362A	SiD S5566B		OJ05362A	Earth Plate (1)
414,415				OB11252A	IC 78M12
D404,405	OB06398A	SiD 1SS176		OE00612A	M3x6 @Pan (2A) (1)
406,410				OJ05351A	TR Heat Sink (1)
411,416				OB06452A	TR 2SD1406 (Y)
417,418				OE00612A	M3x6 @Pan (2A) (1)
D407	OB06282A	SiD DBA10B.C.	IC403	OJ05351A	TR Heat Sink (1)
D408,413	OB12420A	SiD MC931		OB06452A	TR 2SD1406 (Y)
D409,412	OB06183A	SiD RB-151	Q403	OE00612A	M3x6 @Pan (2A) (1)
ZD401,402	OB12464A	ZD 15V UTZJ15C		OJ05351A	TR Heat Sink (1)
ZD403	OB12440A	ZD 6.8V UTZJ6.8C		OB06452A	TR 2SD1406 (Y)
ZD404	OB12437A	ZD 6.2V UTZJ6.2C	Q406	OB08680B	Heat Sink A (1)
RY401	OB90250A	Relay 24V G6C-1117P		OE00972A	Nut Hex, M3 (1)
RY402	OB90249A	Relay 12V G6C-1117P		OE03319A	M3x8 @Binding (1)
T2	OB50090A	Power Transformer	D401	OB12388A	SiD RBV-602
R401,414	OB09695A	RK 5.6K 1/6W J		OE03030A	M3x6 @Binding (1)
415,416				OJ05335B	SiD Heat Sink (1)
R402,403	OB09686A	RK 2.4K 1/6W J			
R404	OB09685A	RK 2.2K 1/6W J			
R405	OB09665A	RK 330 1/6W J			
R406	OB09669A	RK 470 1/6W J			
R409	OB09640A	RK 30 1/6W J			
R410	OB09655A	RK 120 1/6W J			
R411	OB09706A	RK 16K 1/6W J			
R412	OB09253A	RF 82 1/2W J			
R417	OB09701A	RK 10K 1/6W J			
R418	OB09707A	RK 18K 1/6W J			
R419	OB24061A	RF 2.7K 1W J			
R420	OB09709A	RK 22K 1/6W J			
C401,402	OB41298A	CMM 0.1μ 50V J			
409,410					
412,414					
416,417					
420,422					
423,431					
C403,404	OB40454A	CE 10000μ 63V			
C405	OB40094A	CE 470μ 25V			
C406,424	OB40134A	CE 470μ 63V			
C407	OB40100A	CE 10μ 35V			
C408	OB40462A	CE 0.47μ 50V			
C411	OB40095A	CE 1000μ 25V			
C413,426	OB01412A	CE 10μ 16V			
C415	OB40079A	CE 220μ 16V			
C418	OB40082A	CE 1000μ 16V			
C419	OB40078A	CE 100μ 16V			
C421	OB40464A	CE 100μ 10V			
C427	OB40077A	CE 47μ 16V			
C428	OB40115A	CE 4.7μ 50V			
C429,430	OB41791A	CSP 1000P 50V J			
C432	OB40132A	CE 220μ 63V			
CN7	OB82947A	4P Connector WHT			
CN12	OB82952A	4P Connector WHT			
CN20	OB82960A	4P Connector RED			
CN27	OB82967A	3P Connector RED			
	OB82983A	PD Connector V340 RED (1)			
	OB82984A	PD Connector V340 WHT (1)			
	OB82985A	PD Connector V290 RED (1)			
	OB82986A	PD Connector V290 WHT (1)			
	OB82987A	PD Connector V330 BLU (1)			
	OB82988A	PD Connector V300 BLU (2)			
	OB82990A	PD Connector V260 YEL (1)			
	OB82991A	PD Connector V150 RED (2)			
	OB82992A	PD Connector V150 WHT (1)			
	OB82993A	PD Connector V100 BLU (1)			
	OB82996A	PD Connector V150 BLK (2)			

3.14. Logic P.C.B. Ass'y

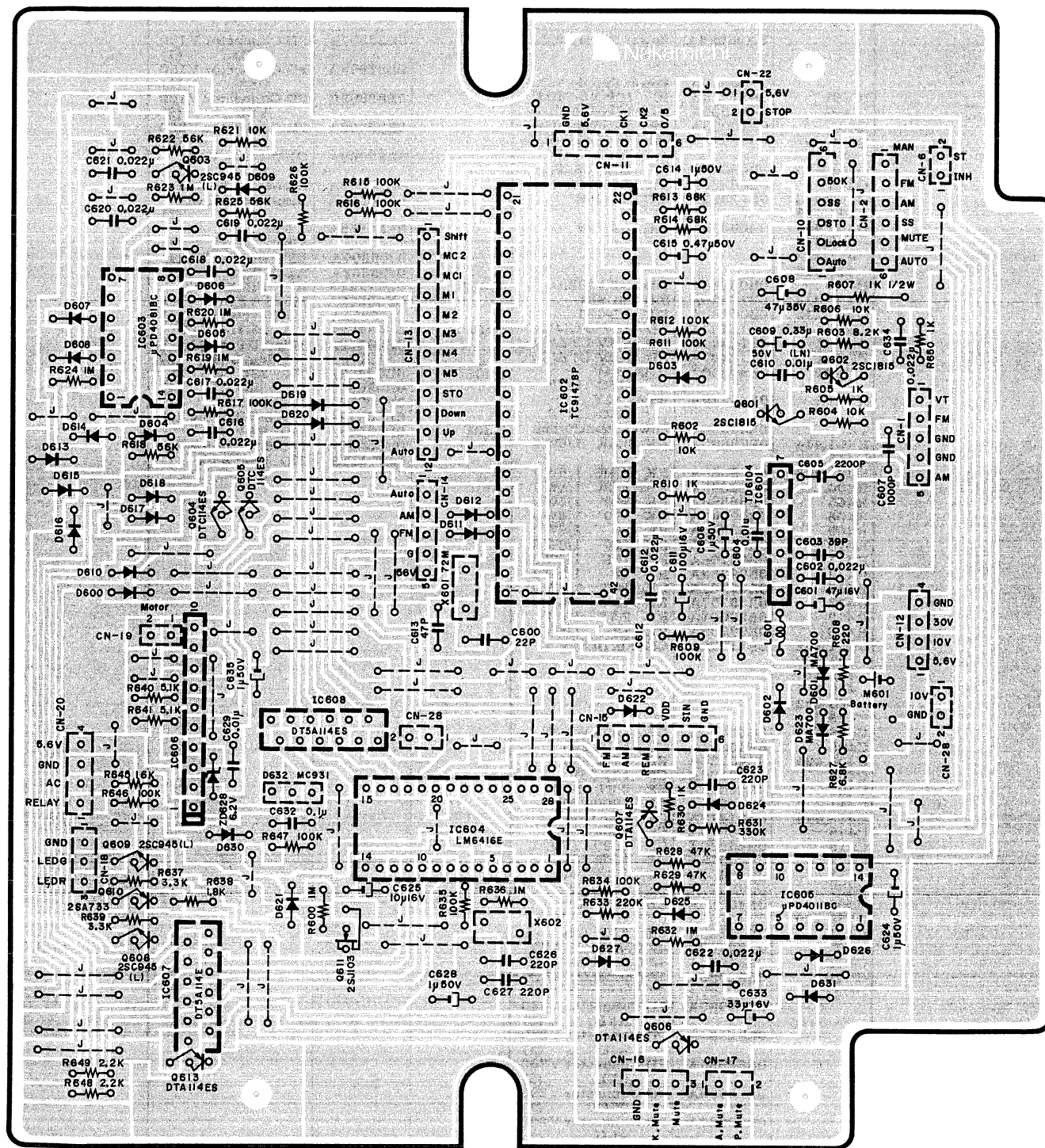


Fig. 3.14

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06610A	Logic P.C.B. Ass'y	CN2	OB81242A	6P-T Post YEL
	OB60439A	Logic P.C.B.	CN6	OB81226A	2P-T Post YEL
IC601	OB11159A	IC TD6104	CN10	OB81241A	6P-T Post RED
IC602	OB11161A	IC TC9147BP	CN11	OB81239A	6P-T Post WHT
IC603	OB06219A	IC μ PD4081BC	CN12	OB81231A	4P-T Post WHT
IC604	OB11279A	IC LM6416E	CN13	OB81263A	12P-T Post WHT
IC605	OB06178A	IC μ PD4011BC	CN14	OB81235A	5P-T Post WHT
IC606	OB11250A	IC LB1645N	CN15	OB81240A	6P-T Post BLK
IC607,608	OB11334A	IC DT5A114E	CN16	OB81230A	3P-T Post YEL
Q601,602	OB10088A	TR 2SC1815L (GR)	CN17	OB81223A	2P-T post WHT
Q603,608	OB01872A	TR 2SC945L (P,Q)	CN18	OB81229A	3P-T Post RED
Q604,605	OB10068A	TR DTC114ES	CN19	OB81225A	2P-T Post RED
Q606,607	OB10058A	TR DTA114ES	CN20	OB81233A	4P-T Post RED
Q610	OB06013A	TR 2SA733 (P,Q)	CN22	OB81224A	2P-T Post BLK
Q611	OB10211A	FET 2SJ103 (GR,BL)	CN28	OB82979A	2P Connector
D600	OB06398A	SiD 1SS176 (26)			
602,618					
621,622					
624,625					
626,627					
630,631					
D601,623	OB12363A	SiD MA700			
D619,620	OB06181A	SiD 1SS53			
D632	OB12420A	SiD MC931			
ZD628	OB12437A	ZD 6.2V UTZJ6.2C			
L601	OB51239A	Micro Coil			
X601	OB92006A	LAL02TA220K			
X602	OB02307A	Crystal 7.2MHz			
M601	OB90241A	FYX-TE725S17			
R600,619	OB09749A	Resonator 800kHz			
620,623		KBR800H			
624,632					
636					
R602,604	OB09701A	Lithium Battery 3V			
606,621		CR2330-1GV5			
R603		RK 1M 1/6W J			
R605,610	OB09699A	RK 10K 1/6W J			
630,650	OB09677A	RK 8.2K 1/6W J			
R607	OB24114A	RK 1K 1/6W J			
R608	OB09661A	RF 1K 1/2W J			
R609,611	OB09725A	RK 220 1/6W J			
612,615		RK 100K 1/6W J			
616,617					
626,634					
635,646					
647					
R613,614	OB09721A	RK 68K 1/6W J			
R618,622	OB09719A	RK 56K 1/6W J			
625					
R627	OB09697A	RK 6.8K 1/6W J			
R628,629	OB09717A	RK 47K 1/6W J			
R631	OB09737A	RK 330K 1/6W J			
R633	OB09733A	RK 220K 1/6W J			
R637,639	OB09689A	RK 3.3K 1/6W J			
R638	OB09683A	RK 1.8K 1/6W J			
R640,641	OB09694A	RK 5.1K 1/6W J			
R645	OB09706A	RK 16K 1/6W J			
R648,649	OB09685A	RK 2.2K 1/6W J			
C600	OB41708A	CC 22P 50V J			
C601	OB01403A	CE 47 μ 16V			
C602,612	OB41787A	CC 0.022 μ 25V Z			
616-621		(9)			
634					
C603	OB41187A	CC 39P 50V J			
C604,629	OB41553A	CC 0.01 μ 25V Z			
C605	OB09586A	CC 2200P 50V K			
C606,614	OB01405A	CE 1 μ 50V			
624,628					
635					
C607	OB09288A	CC 1000P 50V K			
C608	OB40103A	CE 47 μ 35V			
C609	OB09327A	CE 0.33 μ 50V (LN)			
C610,632	OB41298A	CMM 0.1 μ 50V J			
C611	OB01400A	CE 100 μ 16V			
C613	OB41709A	CC 47P 50V J			
C615	OB40111A	CE 0.47 μ 50V			
C622	OB41290A	CM 0.022 μ 50V J			
C623	OB41278A	CM 2200P 50V J			
C625	OB01412A	CE 10 μ 16V			
C626,627	OB41734A	CC 220P 50V J			
C633	OB40076A	CE 33 μ 16V			
CN1	OB81238A	5P-T Post YEL			

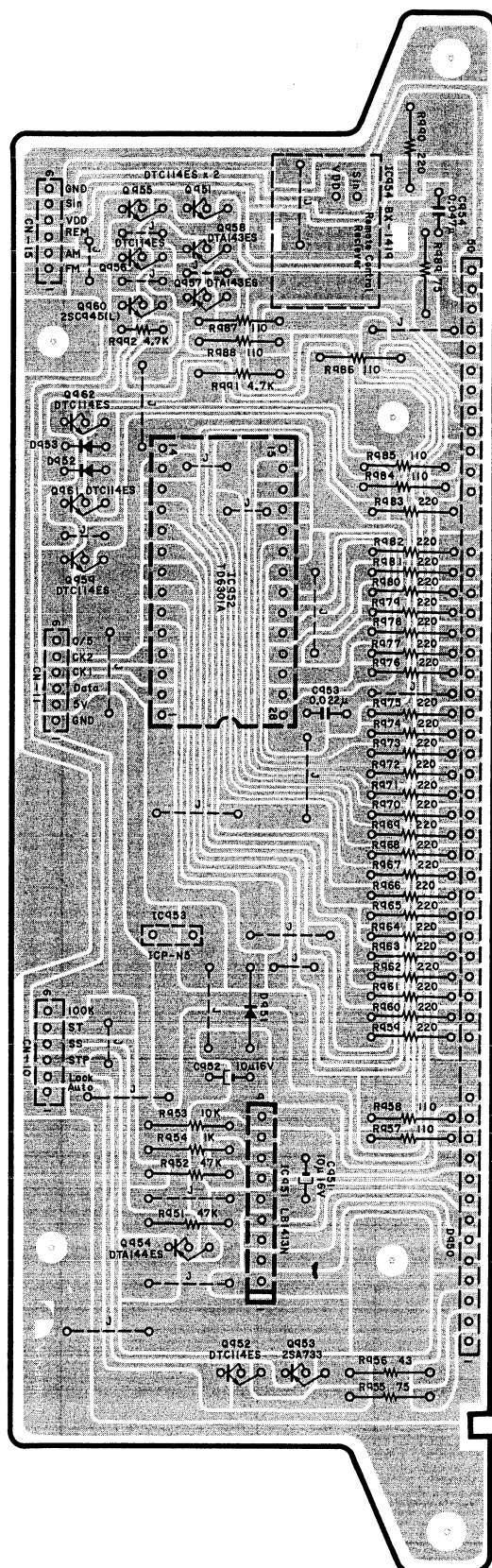


Fig. 3.15

Schematic Ref. No.	Part No.	Description
	BA06646A	Display P.C.B. Ass'y
	OB60441A	Display P.C.B.
IC951	OB11244A	IC LB1413N
IC952	OB11160A	IC TD6301A
IC953	OB11248A	IC ICP-N5-T104
IC954	OB19005A	IC BX-1419
Q951,952	OB10068A	TR DTC114ES
955,956		
Q953	OB06013A	TR 2SA733 (P,Q)
Q954	OB10053A	TR DTA144ES
Q957,958	OB10060A	TR DTA143ES
Q959,961	OB10068A	TR DTC114ES
962		
Q960	OB01872A	TR 2SC945L (P,Q)
D950	OB12414A	Display SL7823-03
D951	OB06181A	SiD 1SS53
D952,953	OB06398A	SiD 1SS176
R951,952	OB05641A	RK 47K 1/4W J
R953	OB01888A	RK 10K 1/4W J
R954	OB01857A	RK 1K 1/4W J
R955,989	OB05959A	RK 75 1/4W J
R956	OB20415A	RK 43 1/4W J
R957,958	OB20416A	RK 110 1/4W J
984-988		(7)
R959-983	OB01933A	RK 220 1/4W J
990		(26)
R991	OB01846A	RK 4.7K 1/4W J
R992	OB09693A	RK 4.7K 1/6W J
C951,952	OB40009A	CE 10 μ 16V
C953	OB41554A	CC 0.022 μ 25V Z
C954	OB41555A	CC 0.047 μ 25V Z
CN10	OB82950A	6P Connector RED
CN11	OB82951A	6P Connector WHT
CN15	OB82955A	6P Connector BLK
	OE00846A	BT3x8 $\oplus$ Pan (2)

4. SCHEMATIC DIAGRAMS

4.1. Amplifier Section

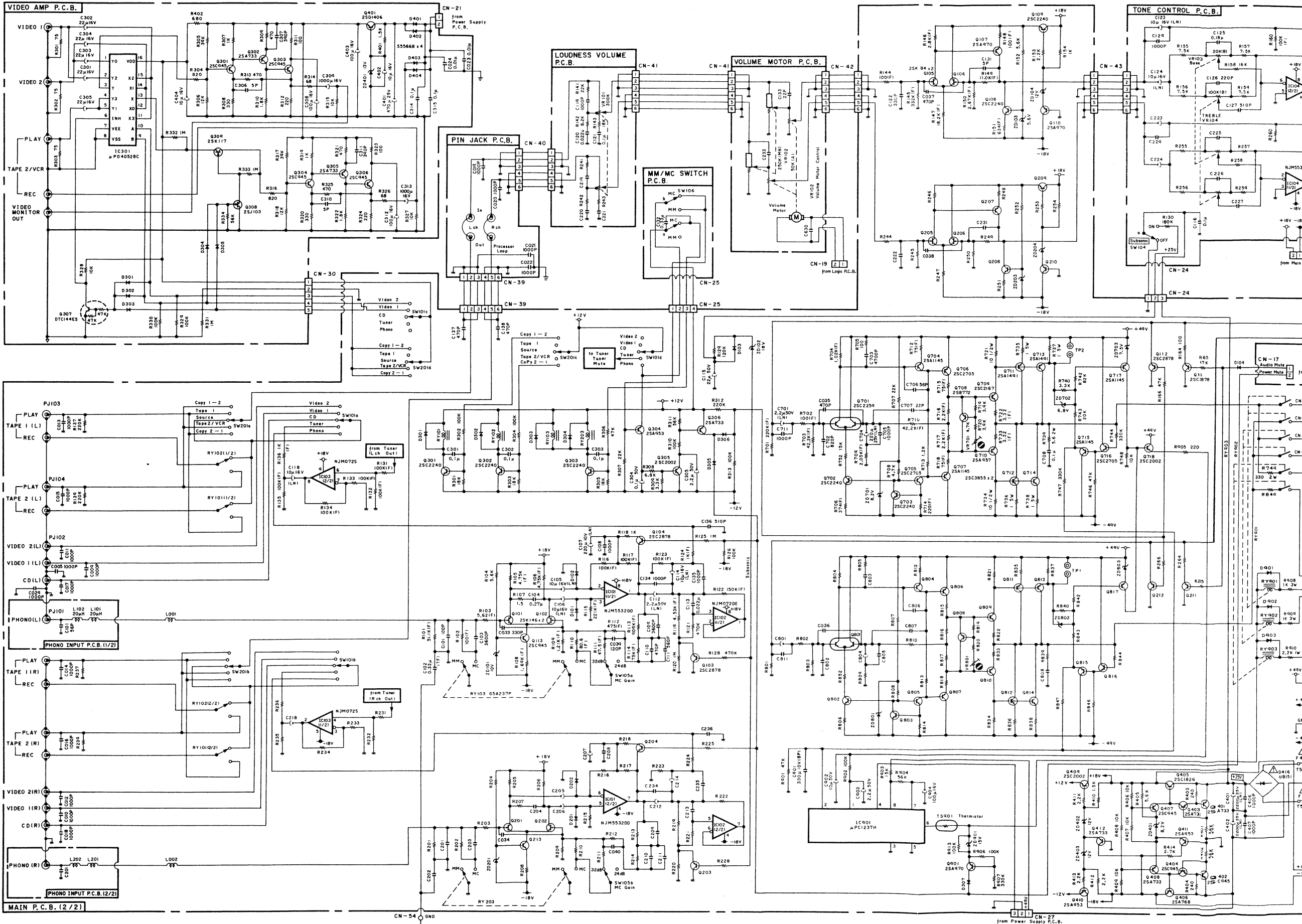


Fig. 4.1

- Notes: 1. Diode is 1SS53, 1S1555, or 1SS1/6 unless otherwise
2. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are inte
3. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are inte

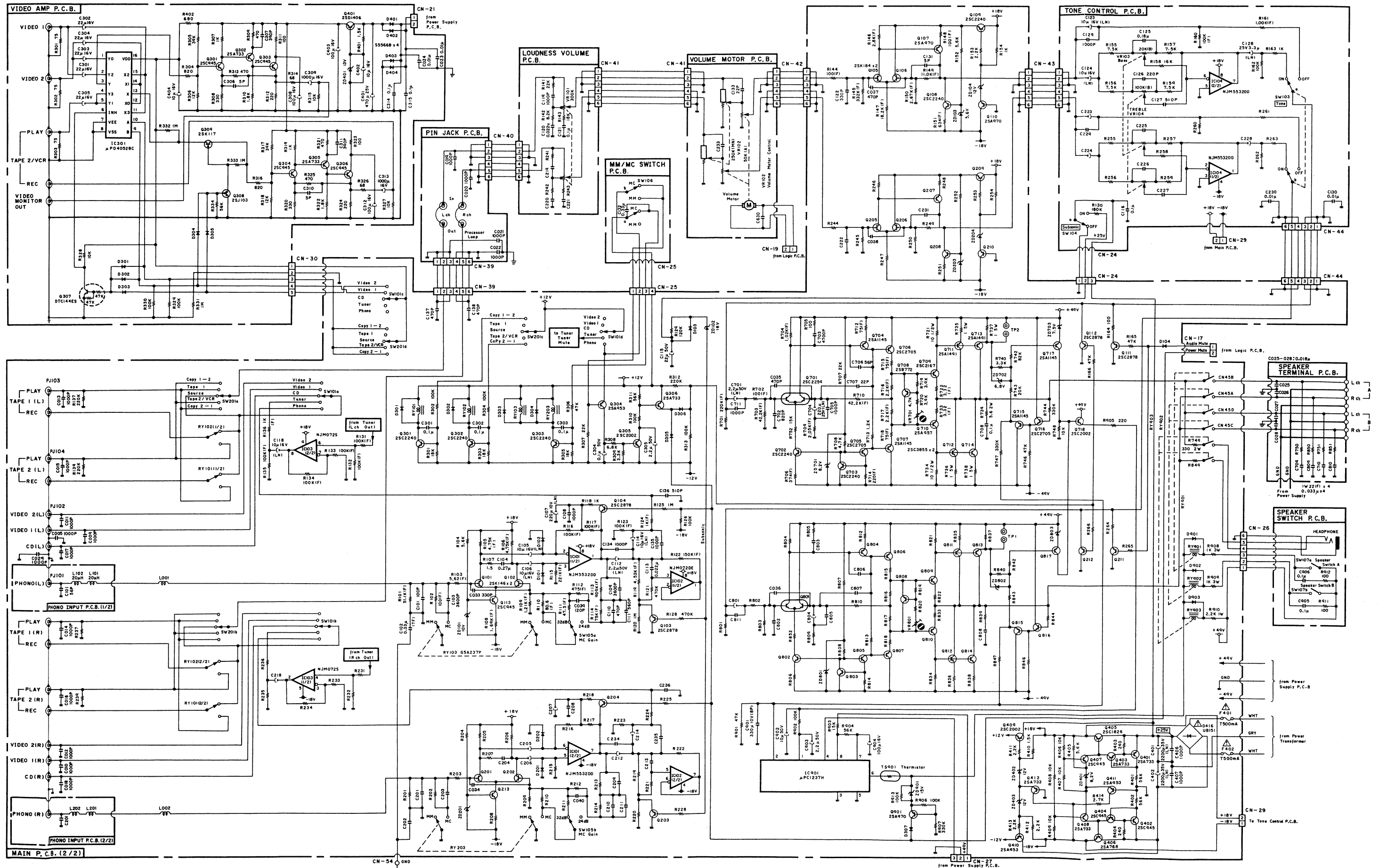


Fig. 4.1

- Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
 2. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
 3. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

4.2. Tuner and Power Supply Section

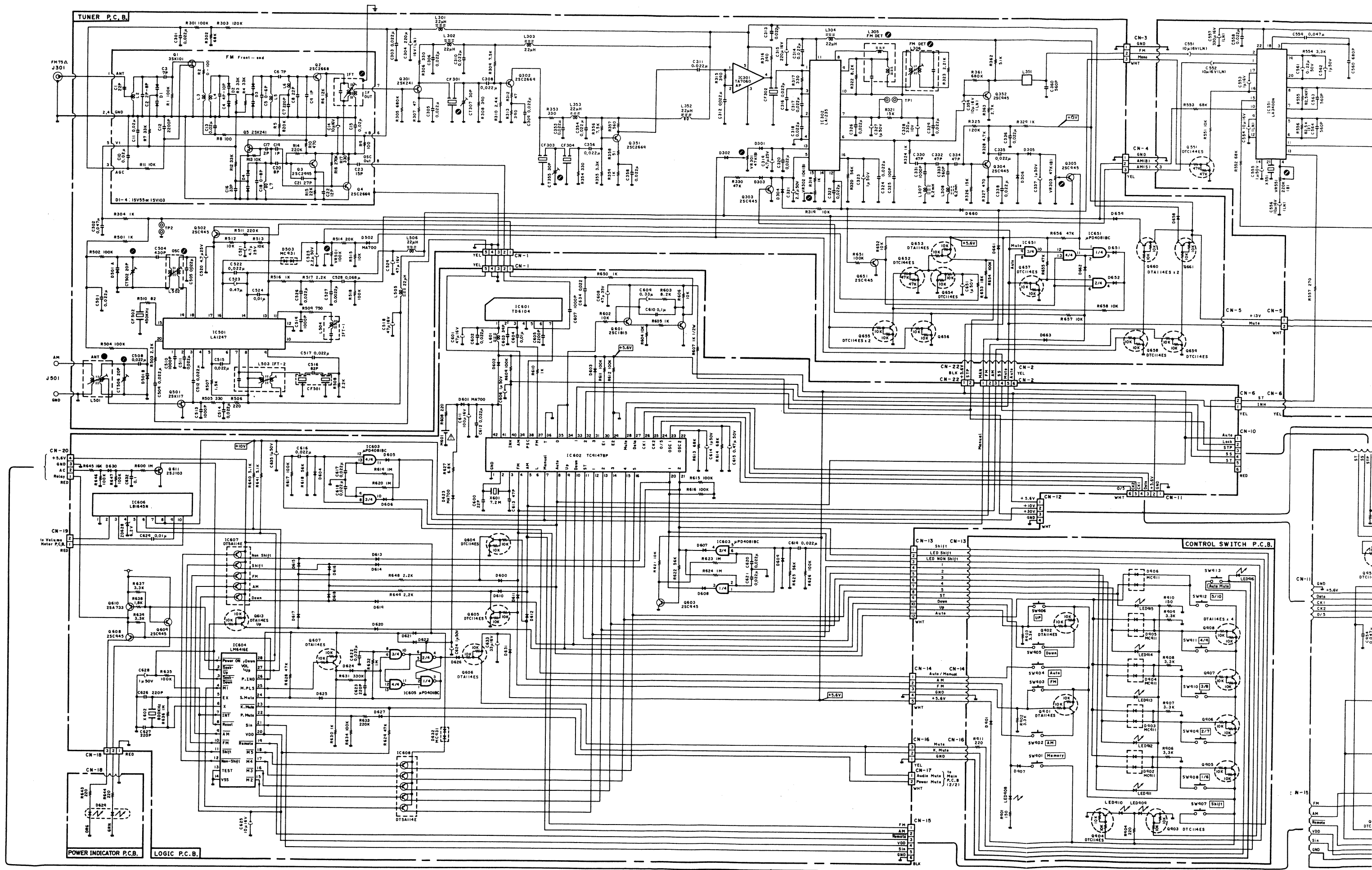
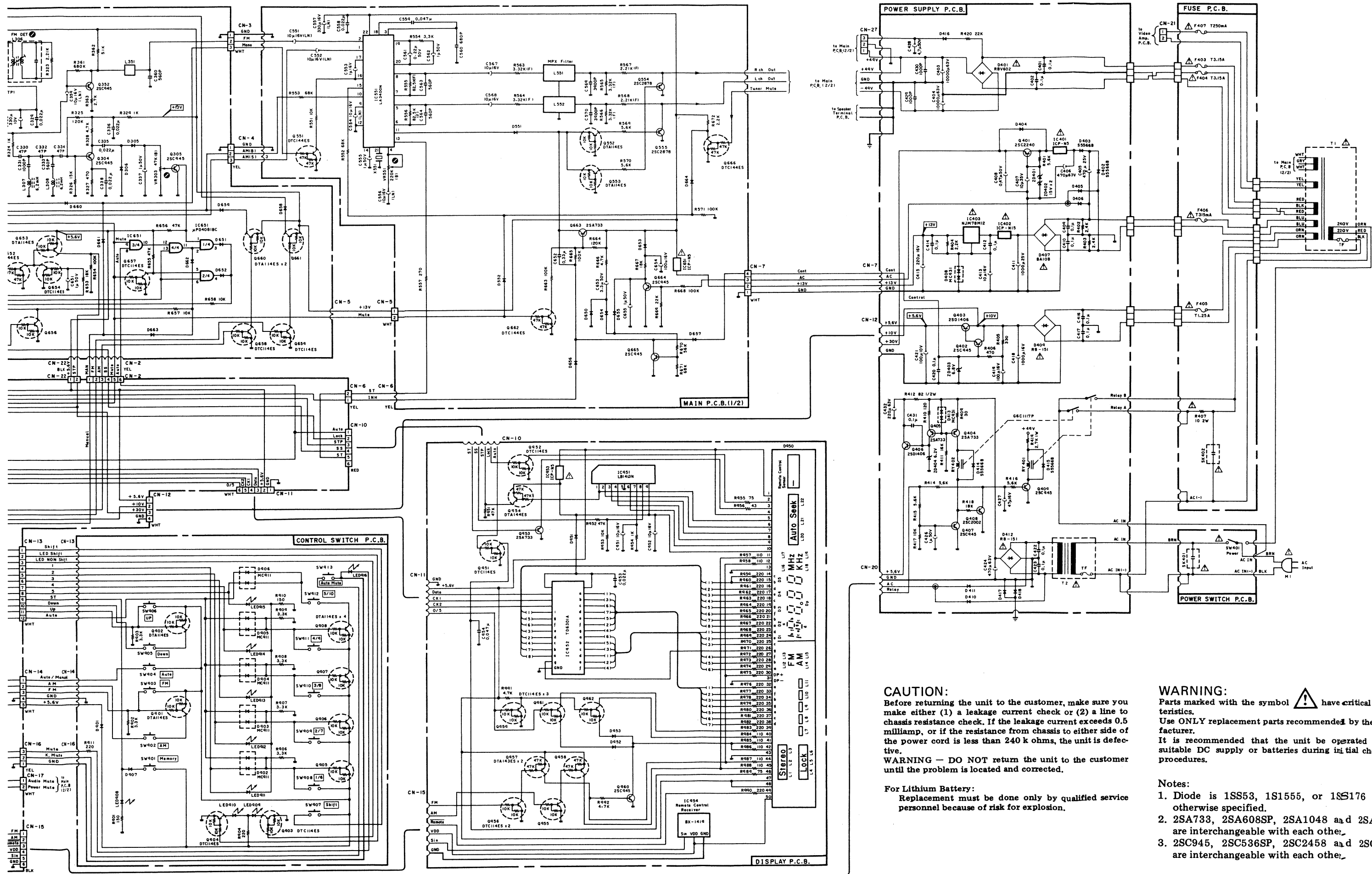


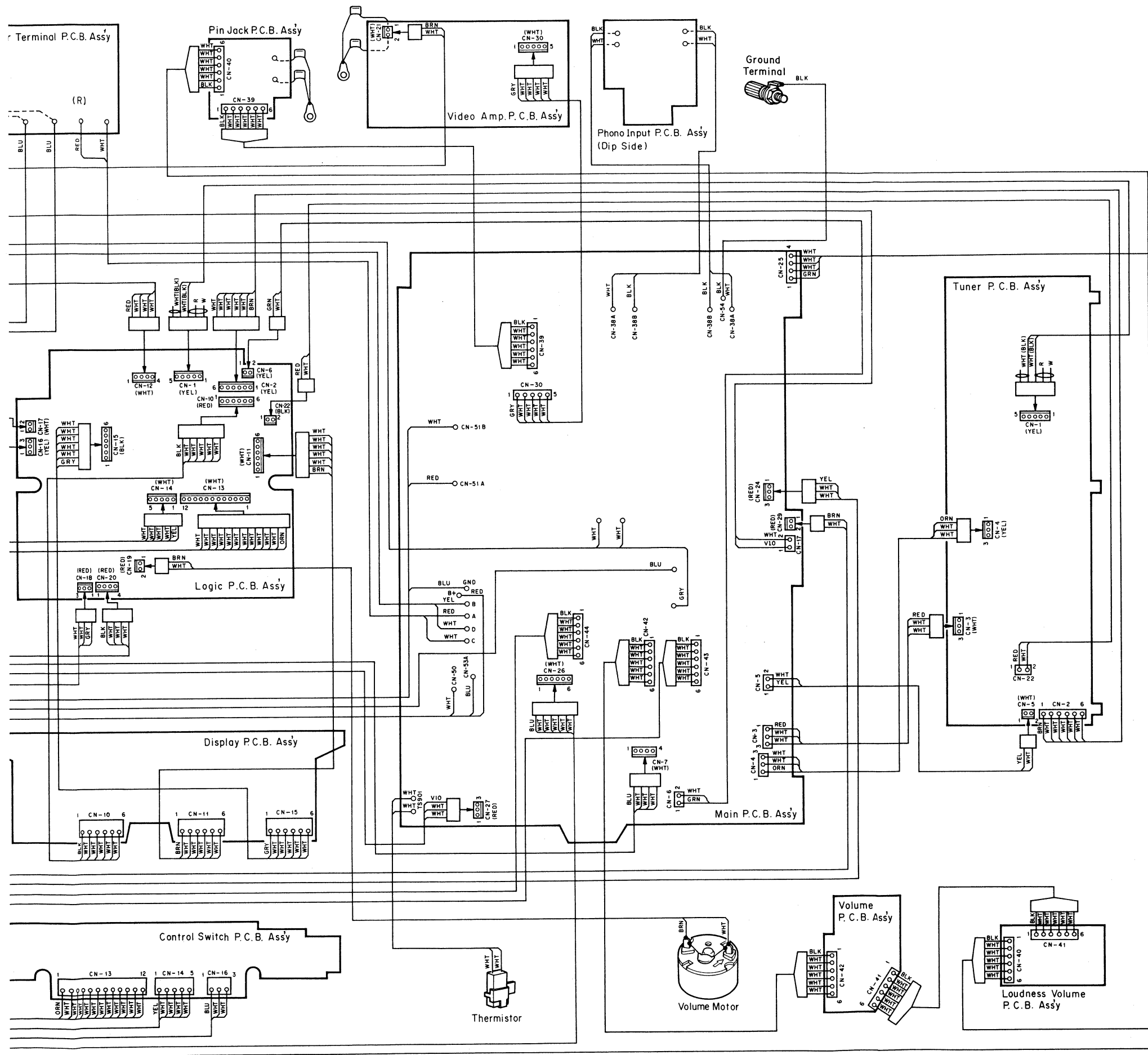
Fig. 4.2





1. Table of wire colors

2. Component side view of the P.C.B. is illustrated unless otherwise specified.



6. SPECIFICATIONS

Power Amplifier Section

Note: Unless noted otherwise specifications are in accordance with IHF-A-202 measured from any high-level input (CD/VIDEO/TAPE) to the speaker output.

Continuous Average Output Power	60 watts per channel into 8 ohms, both channels driven, 20—20,000 Hz at no greater than 0.1% THD
Dynamic Output Power	85 watts per channel into 8 ohms 125 watts per channel into 4 ohms
Dynamic Head Room (8 ohms)	1.5 dB
Power Bandwidth	5—30,000 Hz
Frequency Response	20—20,000 Hz; +0, -1 dB 5—45,000 Hz; +0, -3 dB
Signal to Noise Ratio (A-WTD, Input Shorted)	Better than 105 dB re Rated Power Better than 85 dB (IHF-A-202)
Total Harmonic Distortion (8 ohms, Rated Power, 20 Hz — 20 kHz)	Less than 0.1%
Intermodulation Distortion (8 ohms, Rated Power, 60 Hz:7 kHz, 4:1)	Less than 0.1%
Headphone Rated Output (40 ohms)	140 mW
Output Current Capability	25A peak per channel

Preamplifier Section

Note: Unless noted otherwise specifications are in accordance with IHF-A-202. Except for Sensitivity, S/N, Tone and Loudness characteristics (which are measured to the speaker outputs), measurements are made from the specified input to Rec. Out.

Sensitivity: (for rated Output)	
Phono MC	60/160 μ V (Gain: 32/24 dB)
Phono MM	2.5 mV
CD/Tape	200 mV
Video	200 mV
Sensitivity: (for 1-watt output, IHF-A-202)	
Phono MC	7.8/21 μ V (Gain: 32/24 dB)
Phono MM	0.32 mV
CD/Tape	26 mV
Video	26 mV
Input Impedance	
Phono MC	100 ohms
Phono MM	47 kohms
CD/Tape	20 kohms
Video	20 kohms
Maximum Input Level (1 kHz)	
Phono MC	3/8 mV (Gain: 32/24 dB)
Phono MM	140 mV
Record Output Level/ Impedance	200 mV/1 kohms
Total Harmonic Distortion (1 kHz, to Rec Out, at 1 V)	
Phono MC	Less than 0.003% (either gain)
Phono MM	Less than 0.002%
RIAA Deviation	
Phono MC	30—20,000 Hz $\pm$ 0.5 dB
Phono MM	30—20,000 Hz $\pm$ 0.5 dB
Signal to Noise Ratio (to speaker output, IHF-A-202)	
Phono MC with 32 dB Gain	Better than 71 dB
24 dB Gain	Better than 70 dB
Phono MM	Better than 78 dB

Tone Controls

Bass 20 Hz, ± 10 dB
Treble 20 kHz, ± 10 dB
Variable Loudness 20 Hz, +20 dB; 20 kHz, +6 dB
(re maximum attenuation: -40 dB at 1 kHz)
Subsonic Filter (Phono Only) .. Cutoff Frequency 20 Hz, -12 dB/octave

Tuner Section

[FM Section]

Note: All RF levels in microvolts given re 300-ohm antenna input. Modulation: Mono 60%, Stereo Pilot 9%, Stereo Audio Signal 51%. All measurements made at Rec. Out Jack.

Frequency Range 87.50—108.00 MHz in 50 kHz steps

IHF Usable Sensitivity 11 dBf/1.9 μ V

(Mono)

50-dB Quieting Sensitivity

Mono 23.0 dBf/7.7 μ V

Stereo 43.0 dBf/77.4 μ V

Signal to Noise Ratio at 65 dBf

Mono Better than 72 dB

Stereo Better than 67 dB

Muting Threshold 30 dBf/17.3 μ V

Frequency Response 20—15,000 Hz ± 1 dB

Total Harmonic Distortion (1 kHz)

Mono Less than 0.20%

Stereo Less than 0.25%

Capture Ratio 2.0 dB

Alternate Channel Selectivity .. 70 dB (± 300 kHz)

Stereo Separation at 100 Hz ... Better than 43 dB

at 1 kHz ... Better than 43 dB

at 10 kHz ... Better than 27 dB

Spurious Response Rejection .. Better than 90 dB

Image Rejection Better than 75 dB

IF Rejection Better than 80 dB

AM Suppression Better than 60 dB

[AM Section]

Note: Modulation — 400 Hz, 30%

Frequency Range 522—1,611 kHz in 9 kHz steps

Sensitivity 53 dB μ /m

Signal to Noise Ratio at 90 ... Better than 52 dB

dB μ /m

Total Harmonic Distortion Less than 0.3%

at 90 dB μ /m

Selectivity Better than 20 dB (± 9 kHz)

General

Power Source 220 V AC, 50/60 Hz

Power Consumption 350 watts max.

Dimensions 430 (W) x 100 (H) x 370 (D) mm

16-15/16 (W) x 3-15/16 (H) x 14-9/16 (D) inches

Approximate Weight 9.8 kg, 21 lbs. 10 oz.

● Specifications and design are subject to change for further improvement without notice.

8. BLOCK DIAGRAMS

8.1. Tuner Section

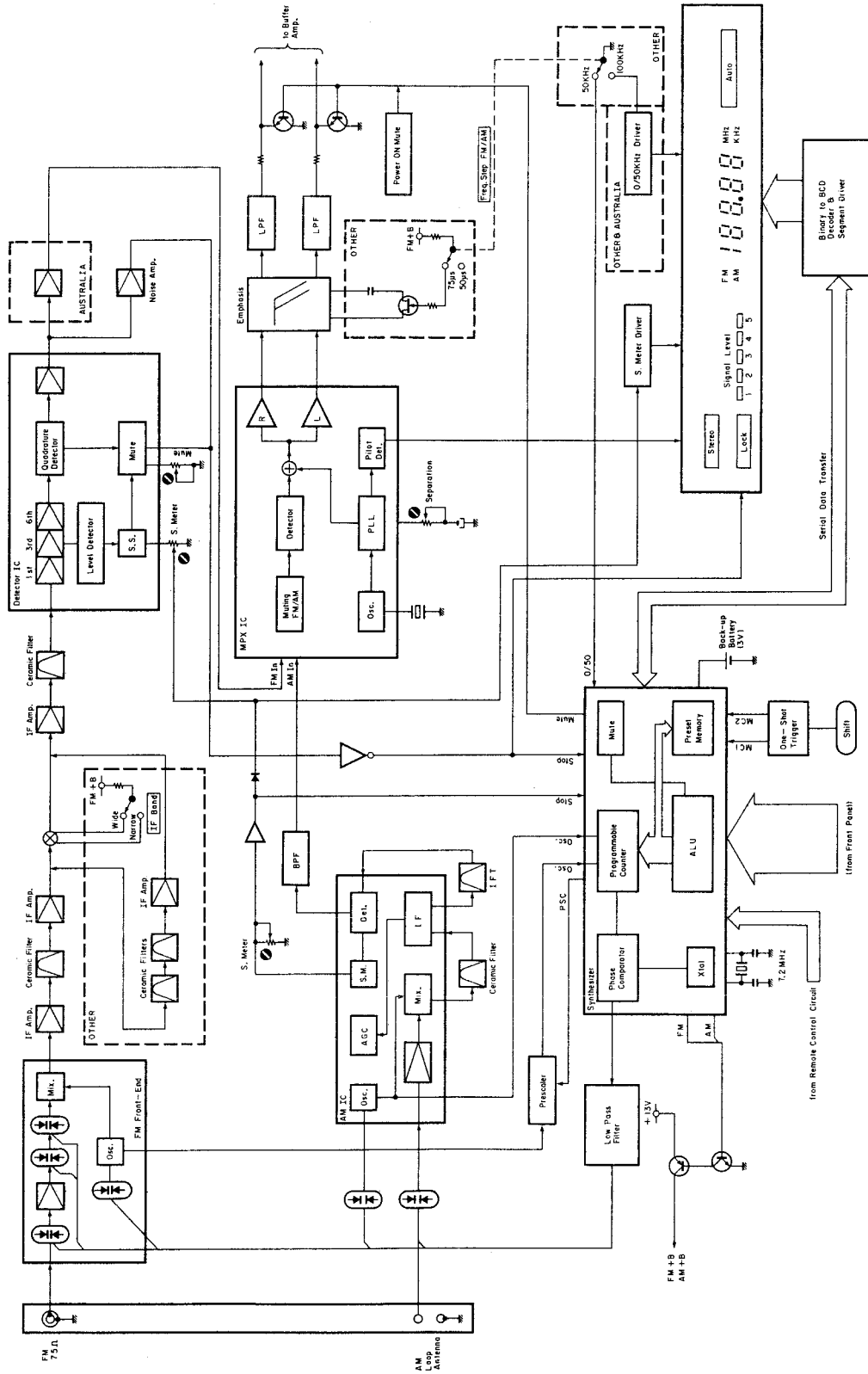


Fig. 8.1

8.2. Amplifier Section

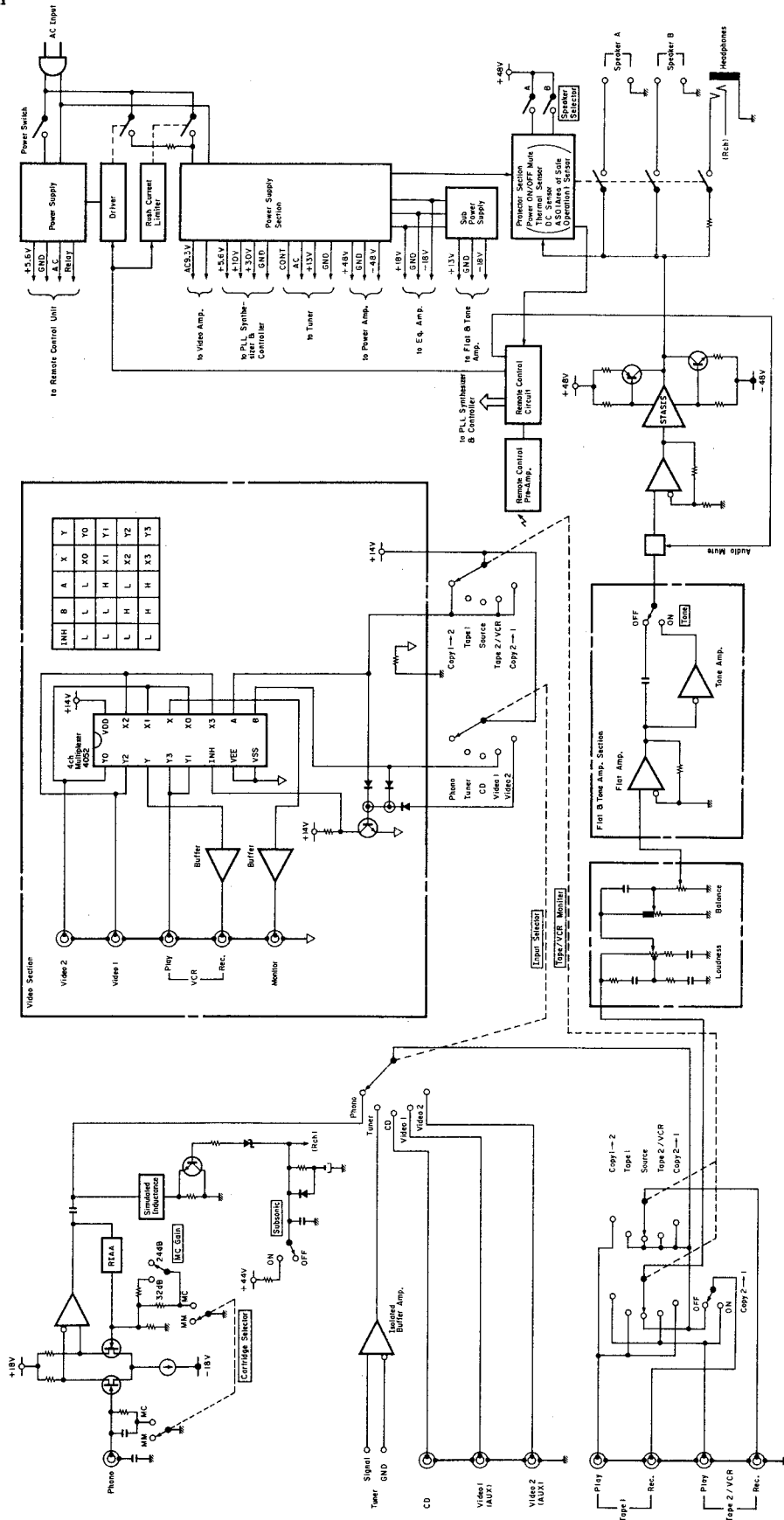


Fig. 8.2

9. SPECIFICATIONS

Power Amplifier Section

Note: Unless noted otherwise specifications are in accordance with IHF-A-202 measured from any high-level input (CD/VIDEO/TAPE) to the speaker output.

Continuous Average Output . . . 60 watts per channel into 8 ohms, both channels driven, 20–20,000 Hz at no greater than 0.1% THD
Power
Dynamic Output Power 85 watts per channel into 8 ohms
125 watts per channel into 4 ohms
Dynamic Head Room (8 ohms) . . 1.5 dB
Power Bandwidth 5–60,000 Hz
Frequency Response 20–20,000 Hz; +0, –0.5 dB
5–75,000 Hz; +0, –3 dB
Signal to Noise Ratio Better than 105 dB re Rated Power
(A-WTD, Input Shorted) Better than 85 dB (IHF-A-202)
Total Harmonic Distortion Less than 0.1%
(8 ohms, Rated Power, 20 Hz – 20 kHz)
Intermodulation Distortion Less than 0.1%
(8 ohms, Rated Power, 60 Hz:7 kHz, 4:1)
Headphone Rated Output 140 mW
(40 ohms)
Output Current Capability 25A peak per channel

Preamplifier Section

Note: Unless noted otherwise specifications are in accordance with IHF-A-202. Except for Sensitivity, S/N, Tone and Loudness characteristics (which are measured to the speaker outputs), measurements are made from the specified input to Rec. Out.

Sensitivity: (for rated Output)

Phono MC 60/160 μ V
(Gain: 32/24 dB)
Phono MM 2.5 mV
CD/Tape 200 mV
Video 200 mV

Sensitivity: (for 1-watt output per IHF-A-202)

Phono MC 7.8/21 μ V
(Gain: 32/24 dB)
Phono MM 0.32 mV
CD/Tape 26 mV
Video 26 mV

Input Impedance

Phono MC 100 ohms
Phono MM 47 kohms
CD/Tape 20 kohms
Video 20 kohms

Maximum Input Level (1 kHz)

Phono MC 3/8 mV
(Gain: 32/24 dB)
Phono MM 140 mV

Record Output Level/ 200 mV/1 kohms

Impedance

Total Harmonic Distortion (1 kHz, to Rec Out, at 1 V)

Phono MC Less than 0.003% (either gain)
Phono MM Less than 0.002%

RIAA Deviation

Phono MC 30–20,000 Hz $\pm$ 0.5 dB
Phono MM 30–20,000 Hz $\pm$ 0.5 dB

Signal to Noise Ratio (to speaker output per IHF-A-202)

Phono MC with 32 dB Gain Better than 73 dB
24 dB Gain Better than 72 dB
Phono MM Better than 80 dB

Tone Controls

Bass 20 Hz, ± 10 dB
Treble 20 kHz, ± 10 dB
Variable Loudness 20 Hz, +20 dB; 20 kHz, +6 dB
(re maximum attenuation: -40 dB at 1 kHz)
Subsonic Filter (Phono Only) . . Cutoff Frequency 20 Hz, -12 dB/octave

Tuner Section

(1) SR-4A & SR-4 (Canada & Other (see Note))

Note: Selector switch settings for Other Model

Frequency Step FM/AM: 100 kHz/10 kHz, De-emphasis: 75 μ s,
IF Band: Wide

[FM Section]

Note: All RF levels in microvolts given re 300-ohm antenna input. Modulation: Mono 100%, Stereo Pilot 9%, Stereo Audio Signal 91%. All measurements made at Rec. Out Jack.

Frequency Range 87.5-108.0 MHz in 100 kHz steps

IHF Usable Sensitivity 11 dBf/1.9 μ V

(Mono)

50-dB Quieting Sensitivity

Mono 14.7 dBf/3.0 μ V

Stereo 37.5 dBf/41.1 μ V

Signal to Noise Ratio at 65 dBf

Mono Better than 82 dB

Stereo Better than 76 dB

Muting Threshold 30 dBf/17.3 μ V

Frequency Response 20-15,000 Hz ± 1 dB

Total Harmonic Distortion (1 kHz)

Mono Less than 0.05%

Stereo Less than 0.07%

Capture Ratio 2.0 dB

Alternate Channel Selectivity . . 55 dB (± 400 kHz)

Stereo Separation at 100 Hz . . . Better than 46 dB

at 1 kHz . . . Better than 50 dB

at 10 kHz . . . Better than 46 dB

Spurious Response Rejection . . . Better than 90 dB

Image Rejection Better than 75 dB

IF Rejection Better than 80 dB

AM Suppression Better than 60 dB

[AM Section]

Note: Modulation - 400 Hz, 30%

Frequency Range 520-1,710 kHz in 10 kHz steps

Sensitivity 53 dB μ /m

Signal to Noise Ratio at 90 . . . Better than 52 dB
dB μ /m

Total Harmonic Distortion Less than 0.3%

at 90 dB μ /m

Selectivity Better than 20 dB (± 10 kHz)

(2) SR-4 (Australia & Other (see Note))

Note: Selector switch settings for Other Model

Frequency Step FM/AM: 50 kHz/9 kHz, De-emphasis: 50 μ s,
IF Band: Narrow

[FM Section]

Note: All RF levels in microvolts given re 300-ohm antenna input. Modulation: Mono 60%, Stereo Pilot 9%, Stereo Audio Signal 51%. All measurements made at Rec. Out Jack.

Frequency Range 87.5—108.00 MHz in 50 kHz steps
 IHF Usable Sensitivity 11 dBf/1.9 μ V
 (Mono)
 50-dB Quieting Sensitivity
 Mono 21.0 dBf/6.1 μ V
 Stereo 42.0 dBf/69.0 μ V
 Signal to Noise Ratio at 65 dBf
 Mono Better than 74 dB (for Australia), Better than 77 dB (for Other)
 Stereo Better than 69 dB (for Australia), Better than 71 dB (for Other)
 Muting Threshold 30 dBf/17.3 μ V
 Frequency Response 20—15,000 Hz $\pm$ 1 dB
 Total Harmonic Distortion (1 kHz)
 Mono Less than 0.12% (for Australia), Less than 0.15% (for Other)
 Stereo Less than 0.20% (for Australia), Less than 0.25% (for Other)
 Capture Ratio 2.0 dB
 Alternate Channel Selectivity . . 70 dB ($\pm$ 300 kHz)
 Stereo Separation at 100 Hz . . . Better than 43 dB
 at 1 kHz Better than 43 dB
 at 10 kHz Better than 37 dB
 Spurious Response Rejection . . . Better than 90 dB
 Image Rejection Better than 75 dB
 IF Rejection Better than 80 dB
 AM Suppression Better than 60 dB

[AM Section]

Note: Modulation — 400 Hz, 30%

Frequency Range 522—1,611 kHz in 9 kHz steps
 Sensitivity 53 dB μ /m
 Signal to Noise Ratio at 90 Better than 52 dB
 dB μ /m
 Total Harmonic Distortion Less than 0.3%
 at 90 dB μ /m
 Selectivity Better than 20 dB ($\pm$ 9 kHz)

General

Power Source 110, 120, 220 or 240 V AC, 50/60 Hz (According to country of sale)
 Power Consumption 350 watts max.
 Convenience Outlets Switched: 2, Unswitched: 1 (for U.S.A., Canada & Other only)
 Dimensions 430 (W) x 100 (H) x 370 (D) mm
 16-15/16 (W) x 3-15/16 (H) x 14-9/16 (D) inches
 Approximate Weight 9.8 kg, 21 lbs. 10 oz.

- Specifications and design are subject to change for further improvement without notice.
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Service Manual

Nakamichi SR-4, SR-4A

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